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# **MARINE MAMMAL AND SEA TURTLE STRANDING RESPONSE**

## **2007 GRANT REPORT**

W.M. Swingle, C.M. Trapani, M.L. Cook, L.R. D'Eri and S.G. Barco



VIRGINIA  
**AQUARIUM**  
STRANDING RESPONSE



**Virginia Coastal Zone**  
MANAGEMENT PROGRAM

*VIRGINIA AQUARIUM FOUNDATION STRANDING  
RESPONSE PROGRAM*

*Marine Mammal and Sea Turtle  
Stranding Response  
2007 Grant Report*

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**A FINAL REPORT TO THE  
VIRGINIA COASTAL ZONE MANAGEMENT PROGRAM  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
COMMONWEALTH OF VIRGINIA**

**By**

W. Mark Swingle  
*Director of Research and Conservation*

Christina Trapani  
*Assistant Stranding Response Coordinator*

Margaret Cook  
*Stranding Response Technician*

Linda D'Eri  
*Stranding Response Technician*

Susan Barco  
*Stranding Response Coordinator*

Virginia Aquarium Foundation Stranding Response Program  
717 General Booth Boulevard  
Virginia Beach, Virginia 23451

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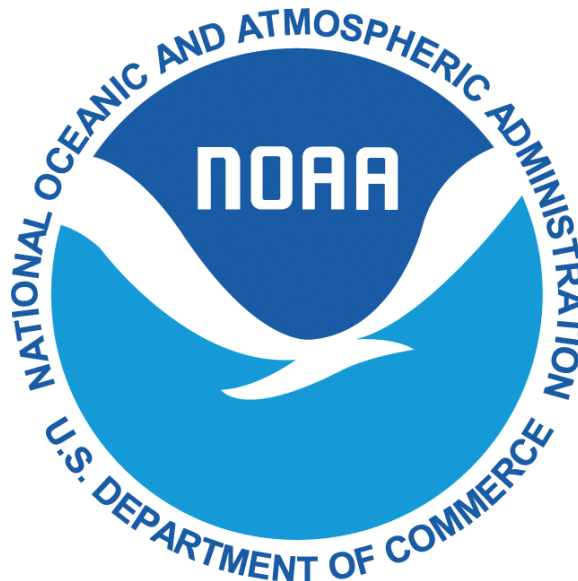
The mission of the Virginia Aquarium & Marine Science Center (formerly Virginia Marine Science Museum) is to increase the public's knowledge and appreciation of Virginia's marine environment and inspire commitment to preserve its existence. The Aquarium is operated by the City of Virginia Beach in cooperation with the Virginia Aquarium Foundation (VAQF) and the Commonwealth of Virginia.

The Virginia Aquarium Research & Conservation Division is responsible for directing the organization's efforts in these areas. With primary support from the VAQF, the division is dedicated to conservation of the marine environment through research, partnerships, marine animal rescue and education.



## Virginia Coastal Zone MANAGEMENT PROGRAM

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## INTRODUCTION

All marine mammals and sea turtles are designated as protected species by the Marine Mammal Protection Act (1972) and/or the Endangered Species Act (1973). The Virginia Aquarium & Marine Science Center (formerly: Virginia Marine Science Museum) Foundation Stranding Response Program (VAQS) holds permits from state and federal authorities for all activities related to marine mammal and sea turtle stranding response and research. VAQS has been responding to marine mammal and sea turtle strandings (more than 3700) in Virginia since 1987. The Aquarium and the VAQS Stranding Center are located in Virginia Beach, VA. VAQS responds to all marine mammal strandings in Virginia and currently maintains the state marine mammal stranding database. In addition, VAQS and their cooperators respond to sea turtle strandings along the lower Chesapeake Bay, eastern shore and ocean coastlines. Sea turtle stranding data are recorded in the VAQS database and reported to the state sea turtle stranding database at the Virginia Institute of Marine Science (VIMS) in Gloucester Point.

VAQS uses staff, volunteers and other organizations (cooperators) to report, record, collect, and examine stranded animals. The organization and training of primary response cooperators is crucial to the stranding network. Rapid response to strandings can result in the rescue of live animals and the collection of valuable data that may otherwise be lost due to decomposition and/or scavenging. Formed in 1991, the VAQS Stranding Response Team (Team) is composed of staff and volunteers trained to respond to stranded animals. VAQS staff provides training programs for 75 Team volunteers and personnel from cooperating agencies and organizations. Instruction in biology, ecology and both live and dead stranding response protocols are provided for marine mammal and sea turtle species found in Virginia. These cooperative training efforts have included the U.S. Coast Guard, U.S. Fish and Wildlife Service, NOAA Fisheries Service (NMFS), Nature Conservancy, Virginia Marine Resources Commission, Virginia Department of Game and Inland Fisheries, state parks, national wildlife refuges, and regional law enforcement authorities. As a result of these continuing efforts, VAQS continues to maintain and improve statewide stranding response.

Marine mammal groups found in Virginia include cetaceans (dolphins, porpoises and whales), pinnipeds (seals) and sirenians (manatees). Marine mammal strandings occur in all months of the year. During the 1990s, Virginia averaged 61 marine mammal strandings per year with a high of 105 in 1994. Since then, strandings have increased dramatically. For the years 2000-2007, Virginia has averaged 102 marine mammal strandings (Fig. 1).

It is important for organizations such as VAQS to examine stranded marine mammals because these species are very difficult to study in the wild. Very little is known about the natural history of many marine mammal species and strandings provide a rare opportunity to thoroughly examine these animals. With the advent of new techniques such as molecular genetic analyses, stranded animals provide a wealth of information about wild populations that are difficult and expensive to study *in situ*. In some species such as pygmy/dwarf sperm whales and beaked whales, data collected from stranded animals provides the best information available on the animals' natural history. Stranding records can indicate seasonal trends in presence and suggest areas of high concentration of marine mammal species such as bottle-nose dolphins and harbor porpoises (Read and Murray, 2000). Spatial and temporal trends in marine mammal mortalities, such as those caused by unusual mortality events and/or fisheries

interactions, can also be monitored from stranding records. Each stranded marine mammal is thoroughly examined including body measurements, external appearance, and internal condition (via necropsy). Data and tissues are collected for life history, histological and toxicological studies. Samples are collected by VAQS and sent to veterinary pathologists, diagnostic testing laboratories, NMFS and numerous other research organizations.

In addition to dead strandings, the VAQS Team responds to several live marine mammals each year. The level of response depends on the type of animal. Sick or injured baleen whales and toothed whales larger than seven feet in length are difficult to rescue and often must be humanely euthanized. Some smaller cetaceans can be rescued if found quickly and in suitable condition. They must be supported in water as soon as possible and treated for shock. Successful cetacean rehabilitation requires large tanks and access to sophisticated equipment. Currently, VAQS is not equipped to attempt long-term rehabilitation of a cetacean. As soon as possible, animals that are good candidates for rehab are transferred to other facilities. Pinnipeds (seals), on the other hand, are amphibious and can be transported in canine kennels. The VAQS Stranding Center has a seal holding pen adequate for short-term triage and a seal rehabilitation unit capable of holding one seal. Seals in triage can be held in a 4' x 4' dry pen with gated entry into a 4' x 4' pool. Following triage, animals are placed in a seal rehabilitation area (large enough for one animal) or are transferred to other facilities in the stranding network that specialize in long-term rehabilitation and release of pinnipeds. Since 2000, VAQS has responded to an average of 4.4 cetaceans and 5.6 pinniped live strandings in Virginia each year. The VAQS Team also responds to live animal emergencies in northeastern North Carolina. In recent years, the number of responses to live marine mammal strandings in North Carolina has increased (9.0 per year since 2000).

Five species of sea turtles (loggerhead, Kemp's ridley, leatherback, green, and hawksbill) are found in Virginia. Sea turtle strandings recorded by VAQS occur primarily in the late spring, summer and fall. The VAQS Team responded to an average of 83 sea turtle strandings per year during the 1990s. Since then, strandings have increased dramatically. Since 2000, VAQS has recorded an average of 261 sea turtle strandings per year (Fig. 6).

Sea turtles are examined in much the same way as marine mammals. Data are recorded for all strandings, and necropsies are performed on stranded carcasses whenever possible. Stranding trends, including probable causes of mortalities, are monitored through stranding records. Stranded sea turtles are checked for flipper and pit tags and results are reported to NMFS. A small number of loggerhead sea turtles nest on Virginia beaches each year. In addition, several green sea turtles have been recorded nesting for the first time in Virginia. The VAQS Team participates in a nesting beach monitoring program with the Back Bay National Wildlife Refuge. Live strandings of sea turtles have also increased and the VAQS Team has successfully rehabilitated and released live stranded turtles. Since 2000, VAQS has responded to an average of 10.4 live sea turtle strandings in Virginia each year. In addition, VAQS Team expertise in sea turtle rehabilitation has resulted in more than 30 animals that stranded outside Virginia being transferred to VAQS for rehabilitation and/or release.

In addition to stranding response, VAQS conducts research on marine mammals and sea turtles. Photo-identification is a non-invasive technique that takes advantage of naturally occurring marks on animals. Photo-ID is used to study both bottlenose dolphins and large whales, primarily humpback whales, in the nearshore waters of Virginia and North Carolina. VAQS has also been conducting research on loggerhead sea turtles since 1990. Early research involved the study of growth potentials of loggerhead hatchlings in controlled

environments. Post-release satellite tracking of aquarium-reared loggerheads was conducted with the help of VIMS. Growth and nutritional studies continue with hatchling loggerheads and non-releasable juvenile and adult loggerheads, Kemp's ridleys and greens.

VAQS Team staff and volunteers present the results of their research at national and regional workshops, at professional meetings and in numerous publications (Appendix I). In addition, VAQS research has been presented to more than eight million people through innovative Aquarium exhibits and public programs. Staff and volunteers present educational programs related to stranding events, on-going stranding response and research throughout the year. Recently, staff have been gaining valuable experience in live animal rehab by visiting and working with staff at other facilities. VAQS staff also serves on federal management and scientific teams studying the interactions of protected species with commercial fisheries and other potentially threatening human activities. They regularly use their expertise and data to comment on projects that may have an effect on regional marine mammal and sea turtle populations, including a proposed naval undersea training range off Virginia's eastern shore. Finally, public and private organizations conducting natural resource surveys and environmental assessments routinely utilize the VAQS stranding database and the expertise of staff for information regarding protected species in Virginia.

## STRANDING RESPONSE METHODS

When examining dead stranded marine mammals and sea turtles, the VAQS Team follows data collection protocols developed by NMFS (Appendix IV). For marine mammals, Level A data are collected on all strandings and recorded in the marine mammal stranding database. Level A data include:

observer	date
species	location
condition	body length
weight	gender
findings of human interaction *	
sample collection and dissemination	
disposition of carcass	

(\* Findings of human interaction consist of clues on a carcass that human activities were responsible for injuries and/or the death of the animal. The two most common types of human interactions are fishery entanglements and vessel strikes. In addition, a special data collection protocol and form have been developed by VAQS for assessing human interactions in marine mammal strandings)

Level B and C data are collected from fresh carcasses. Level B and C data are recorded on numerous other data sheets often provided by other research organizations. These more precise data include:

- age
- extensive body measurements
- descriptions and photographs of external & internal appearance
- parasite and pathology occurrence
- stomach contents
- reproductive status
- genetic information

tissue contaminant levels  
information for specific research

In order to provide timely, accurate and usable data, VAQS compiles these data in a database. The computer system, database and software allow for analytical study of the data including GIS mapping. When combined with the extensive VAQS photo and video catalogs, the marine mammal stranding database can be an invaluable tool for scientists, natural resource managers and other state and federal agencies.

Sea turtle data are collected in much the same manner as for marine mammals (Appendix IV). In addition to the Level A data listed above, the VAQS Team also examines sea turtle carcasses for several types of tags. Pit tags and wire tags require specialized equipment in order to be detected. Fresh turtles are examined for overall health and body condition, GI contents, gender and findings of human interaction.

Live marine mammals and sea turtles have become an increasing part of stranding response for the VAQS Team. Live stranding response is quite different from responding to dead animals. While time is important when responding to a fresh dead stranding, timely response is crucial to the welfare and potential survival of live stranded animals. Once a live stranding is confirmed, staff and volunteers can be ready to respond in minutes. Cooperating agencies, especially on Virginia's eastern shore, have immensely improved the VAQS Team's ability to rescue animals. Whenever possible, live stranded animals are rushed to the Stranding Center where they are immediately treated for shock and other obvious injuries. VAQS veterinary staff and the Team veterinary technician have developed protocols and data sheets for live animal response and rehabilitation. VAQS staff has established an excellent working relationship with the local hospital laboratory and with local vet clinics that provide valuable services in the form of blood and sample analyses, radiograph support and doses of less common drugs. In addition, the medical team works with several specialized veterinarians and technicians, including eye specialists and advanced diagnostic technicians, on special cases. The VAQS Team is now experienced at working with live stranded sea turtles and seals and has gained valuable experience with live cetaceans.

## **DISCUSSION OF 2007 VIRGINIA STRANDING DATA**

### **MARINE MAMMALS**

VAQS stranding data are presented for the calendar year 2007. A total of 85 marine mammals stranded in Virginia during 2007 (Table 1). In the past ten years, the number of marine mammal strandings has varied from a low of 62 in 1998 to a high of 128 in 2001 (Fig. 1). The high numbers of strandings in 1999 and 2001 were accompanied by high numbers of harbor porpoise strandings (Fig. 5B). Marine mammal strandings occur in all months of the year, but some marine mammals (*i.e.* bottlenose dolphins, harbor porpoises and seals) tend to strand seasonally, while others (*i.e.* large whales and other cetaceans) can occur at any time of the year (Fig. 2). In the past ten years, bottlenose dolphins have comprised the majority of the marine mammals that strand each year. 2007 was a typical year with bottlenose dolphins comprising 61% of the strandings (Fig. 3). Marine mammal strandings occurred throughout Virginia's ocean and bay waters. Normally, the strandings are most common along the eastern shore and southern shore of the Chesapeake Bay mouth and the southern ocean coast

(Fig. 4). Pictures of some of the notable marine mammal strandings in 2007 are included in Appendix II.

Marine mammals are divided into five data groups for analyses. These data groups are: (1) bottlenose dolphin - the most common marine mammal in Virginia, (2) harbor porpoise - a common small cetacean that occurs in late winter and spring, (3) large whales - primarily baleen whales such as humpback, fin, right and minke whales, (4) other cetaceans - primarily oceanic species with low stranding rates such as pilot whales, pygmy and dwarf sperm whales, pelagic dolphins and beaked whales, and (5) pinnipeds - harbor, harp, hooded and gray seals. Live stranded animals are included in these analyses but are also addressed separately below.

### ***Live strandings***

Live marine mammal strandings have increased in recent years. In 2007, VAQS recorded 15 live marine mammal strandings, seven of which stranded in northeastern North Carolina (Table 2). These strandings occurred throughout the year and consisted of seven seals and eight cetaceans. Seals were recovered, provided with emergency medical care and triage, and then provided with long-term rehabilitation, if needed. Five of the seals were successfully rehabilitated and released. Four of the seals (2 harbor seals “Sassy” and “Noodlehead”, 2 harp seals “Jaws” and “Chewbacca”) were outfitted with satellite tags and released in Virginia. Their post-release movements can be viewed on the WhaleNet website. At the end of the year, one harbor seal remained in rehabilitation at the Stranding Center. The eight cetaceans included one dwarf sperm whale, two pygmy sperm whales, two bottlenose dolphins, two harbor porpoises, and one humpback whale. The humpback whale was entangled in gill nets off the coast of Virginia Beach (see Appendix II). Specially trained disentanglement responders from VAQS were able to free the whale from the gear. The disentanglement was conducted with the guidance and assistance of the Provincetown Center for Coastal Studies, the leaders of the large whale disentanglement network. One of the stranded harbor porpoises, recovered on the outer banks of North Carolina, was also successfully triaged and transported to the Riverhead Foundation for rehabilitation and eventual release. This marked only the second successful rehabilitation and release of a stranded cetacean recovered in Virginia by VAQS.

### ***Bottlenose dolphin***

Bottlenose dolphin (*Tursiops truncatus*) are the most common marine mammals sighted in Virginia waters. They are also the most commonly stranded marine mammals in the state. Most dolphins strand from April to October, which is concurrent with their seasonal appearance in Virginia coastal waters (Barco *et al.* 1999; Fig. 2). During 2007, 52 bottlenose dolphin strandings were recorded in Virginia (Figure 5A). Strandings occurred primarily along the Atlantic Ocean and lower Chesapeake Bay shorelines, although they were also recovered inside the bay, as well (Fig. 4). In 2007, 46% (24) of the strandings occurred in Virginia Beach and 40% (21) occurred on the eastern shore. Gender was determined for 42 of the 52 stranded dolphins. Females comprised 52% (22) and males comprised 48% (20) of

the known gender animals. Thirteen (25%) of the stranded dolphins were less than 160 cm (defined as “young of the year”, YOY), the approximate size of a one-year old dolphin (Fig. 5A; Urian *et al.* 1996). Examination of YOY has revealed evidence of infanticide in the form of broken bones, hemorrhaging and organ damage (Dunn *et al.* 2002). Of the dolphins that were fresh to moderately decomposed ( $n = 33$ ), signs of human interaction could not be determined in 16 (49%), were positive in 11 (33%), and were not observed in six (18%). Most of the signs of interactions were related to fisheries entanglements.

### ***Harbor porpoise***

Harbor porpoise (*Phocoena phocoena*) were observed only occasionally in Virginia stranding records during the 1980's. Increases in harbor porpoise strandings occurred along the mid-Atlantic coast in 1993-1994 and the increases were most dramatic in Virginia (Cox *et al.* 1998, Swingle *et al.* 1995). In recent years, they have been the second most commonly stranded marine mammals in Virginia. Harbor porpoises typically strand in late winter and early spring (Fig. 2), and strandings occur along the ocean shorelines (Fig. 4). During 1999, 40 harbor porpoise strandings were recorded in Virginia, but in 2000, that number dropped precipitously to only four. 2001 was another big year (30 strandings), followed by only six harbor porpoise strandings in 2002. There were 19 strandings in 2003, nine in 2004, 28 in 2005, nine in 2006, and only eight in 2007 (Fig. 5B). Harbor porpoise strandings were at low levels for the second consecutive year, compared to the cycling pattern in the previous eight years such that every other year produced a relatively high number. Whether these patterns relate to fluctuations in abundance of the population or stocks, a threat that is cyclical in nature, or other factors is not yet known.

### ***Large whales***

Large whales do not strand often in Virginia. With the exception of the sperm whale, large whales are typically baleen whales such as humpback or fin whales. All of the large whales normally found in Virginia are endangered species. Because of the logistics involved in examinations of large whales, an extensive large whale response protocol was developed (Blaylock *et al.* 1996). The protocol was developed in response to increased strandings of humpback whales in Virginia and North Carolina in the early 1990's (Swingle *et al.* 1993, Barco *et al.* 2002). The response protocol has since been further developed and is specifically applied to northern right whales (McLellan *et al.* 2004). During 2007, there were three large whale strandings in Virginia including two humpback whales (*Megaptera novaeangliae*) and one fin whale (*Balaenoptera physalus*). One humpback was discovered floating and severely decomposed off of the eastern shore. The fin whale died as a result of a ship strike that caused broken vertebrae and ribs, as well as tissue damage. Overall, there have been 2.9 large whale strandings per year in Virginia since 2000 (Fig. 5C). In addition to strandings, VAQS also responds to large whale entanglements. VAQS staff has been qualified to respond to entangled whales by the Provincetown Center for Coastal Studies in MA. In addition, specialized whale disentangling gear and supplies are stored at the VAQS Stranding Center for use in the mid-Atlantic region. This equipment and training were essential in the successful disentangling of a humpback whale in the waters off Virginia Beach in 2007 (described in the live strandings section).

### ***Other cetaceans***

“Other cetacean” species generally include pelagic delphinids, *Kogia* species and beaked whales. This group accounted for 12 strandings during 2007. These strandings typically occur along the ocean and lower bay shorelines and sometimes involve live animals. In 2007, there were five common dolphin (*Delphinus delphis*), one Risso’s dolphin (*Grampus griseus*), five pygmy sperm whale (*Kogia breviceps*) and one Gervais’ beaked whale (*Mesoplodon europaeus*). Two of the pygmy sperm whales were alive when they stranded, though each one had to be euthanized.

### ***Pinnipeds***

Pinniped strandings have generally increased in Virginia since the early 1990s, and 10 strandings were recorded from Virginia during 2007 (Fig. 3, 5D). The strandings were identified as seven harp seals (*Phoca groenlandica*), one gray seal (*Halichoerus grypus*), one harbor seal (*Phoca vitulina*) and one unidentified seal. Regular sightings of seals in Virginia continue to be common occurrences in winter and early spring. During 2007, there were a large number of harp seal strandings in Virginia. Harp seals are known as “ice seals” because their normal range and preferred habitats involve offshore pack ice. This raises the question – what are ice seals doing in Virginia? There are no apparent answers to this question as yet, but data being collected by the VAQS Team and others in the stranding network may help to shed light on this phenomenon in the future.

Improved education and training of stranding network personnel have decreased the unwarranted captures of otherwise healthy seals which have hauled-out to rest on Virginia shorelines, piers, jetties and rock islands. Nevertheless, four of the seals stranded alive. Two of the harp seals were successfully rehabilitated and released, and one harbor seal remained in rehab at the end of the year. Seal rescue and rehabilitation efforts continue to represent significant challenges for the VAQS Team and they continue to improve and gain valuable experience and expertise.

## **SEA TURTLES**

2007 was another year of moderate levels of sea turtle strandings recorded by VAQS (Table 3). It is important to note that the sea turtle stranding data presented in this report do not reflect the entire state. VIMS maintains the state sea turtle stranding database and compiles yearly reports for all Virginia strandings. Since 2000, VAQS has reported both extremely high (460 in 2003) and relatively low (166 in 2006) numbers of sea turtle strandings, with an average of 261 per year (Fig. 6). Sea turtle strandings recorded by VAQS during 2007, however, were very similar to 2005-2006 and some of the lowest levels recorded since the 1990s (Fig. 6). The VAQS Team responded to 132 sea turtle strandings during the year and an additional 45 strandings were reported by stranding network cooperators trained by VAQS (Table 3). Cooperators’ reports are given VASC, VDGIF and VIMS numbers in the database. VASC reports originated from Chincoteague, Eastern Shore and Back Bay National Wildlife refuges. There was also one turtle that was supplied by East Coast Observers (ECO) from a dredge take. June was the busiest month with 48 strandings (Fig. 7). Loggerheads (*Caretta*

*caretta*, n = 139) were the primary species recorded, followed by Kemp's ridleys (*Lepidochelys kempii*, n = 16), leatherbacks (*Dermochelys coriacea*, n = 2) and greens (*Chelonia mydas*, n = 15) (Fig. 8). Five of the stranded sea turtles were unable to be identified to species. Because these data reflect only those sea turtle strandings recorded by VAQS and cooperators, the distribution of strandings was primarily along the ocean and lower bay shorelines (Fig. 9). The eastern shore of Virginia was the area where 38% (68) of the sea turtle strandings were found. Accomack County accounted for 13% (23) and Northampton County for 25% (45) of the total. Strandings in Virginia Beach contributed to 45% (79) and Norfolk to 12% (22) of the total.

Improved efforts by VAQS to recruit and train cooperators have greatly enhanced stranding response on the eastern shore. Externally, several dead stranded turtles appeared to have been hit by vessels. In some cases, the carcasses were fresh enough to conduct thorough necropsies. Necropsies on stranded turtles sometimes reveal signs of human interaction in the form of fish lures, hooks and line in the gut of turtles. This fishing equipment could be from recreational or commercial (long-line) gear and may have been actively fishing or "ghost" gear. Further understanding the impacts that recreational and commercial fishing have on turtles is needed. Lastly, the VAQS Team participated in several research projects with NMFS and USFWS. Flippers were collected from sea turtles for studies on aging, and skin and muscle samples were collected for genetic studies. Live loggerhead and green sea turtles rehabilitated by VAQS were used in tracking studies of post-release movements. Pictures of some of the notable sea turtle strandings in 2007 are included in Appendix III.

### ***Live strandings***

2007 was a busy year for the VAQS Team with eight live sea turtle strandings from Virginia – two greens, five loggerheads and one Kemp's ridley. Two of these turtles were successfully recovered, rehabilitated and released, and one remained in rehab at the end of the year. In addition, two loggerheads were transferred to the VAQS Stranding Center from other stranding network facilities. During the year, two loggerheads ("Fred" and "CD Chill"), one green ("Tiki") and one Kemp's ridley ("Mighty Luke") were released in Virginia. Fred and Mighty Luke originally stranded in 2006 and completed rehab in 2007. Tiki was the first adult female green turtle recorded from Virginia stranding records. She was discovered with a fore flipper entangled in a whelk pot buoy line. Following intensive rehabilitation, this 300 pound turtle was outfitted with a satellite tag and released. The post-release movements of both Fred and Tiki can be viewed on the SeaTurtle.org website. During the year, the VAQS Team spent many hours medicating and feeding sea turtles. Some of the sea turtles had stranded in the previous year and had been in rehab for many months prior to release. When the year ended, there were two sea turtles in rehab pending release in 2007 (Table 4).

## **VAQS ACTIVITIES DURING 2007**

VAQS conducted trainings on biology, ecology and stranding response protocols for sea turtles and marine mammals during the year. Trainings were provided to Virginia Aquarium Outreach Instructors, VAQS Team volunteers and to other cooperators in the state strand-

ing network including: Back Bay National Wildlife Refuge, Eastern Shore National Wildlife Refuge, Chincoteague National Wildlife Refuge; Virginia Beach police, animal control and beach maintenance personnel; U.S. Coast Guard; Dam Neck and other military base natural resources personnel; personnel from VMRC, VDGIF, and state parks; Nature Conservancy and other natural resources groups. In addition, lectures were presented on the topics of marine mammal and sea turtle necropsies, new findings from sea turtle research, and federal efforts to manage and protect marine mammals. VAQS staff attended numerous conferences and workshops and shared knowledge of sea turtle and marine mammal strandings in Virginia. Staff also traveled to receive specialized training in response to marine mammal unusual mortality events and for the tagging and release of a rehabilitated harbor porpoise. Educational programs were presented at many local and regional festivals, to school groups and civic organizations as well as during special VAQ events. A portable exhibit was utilized showing the activities of the VAQS and the Virginia stranding network, and promoting conservation of marine animal species and their habitats. A complete list of all professional, education and training activities is included in Appendix I of this report.

Grant funds were used in conjunction with funds from the Virginia Aquarium Foundation to staff the Stranding Center with one full-time stranding program coordinator, one veterinary technician, one assistant coordinator/volunteer coordinator and four hourly stranding technicians. The VAQS Team completed another calendar year using an on-call system developed to ensure that volunteers were available for stranding response, seven days per week, for the entire year. Created and managed by volunteer team response leaders, the on-call system greatly enhances the Team's readiness and rapid response. VAQS Team volunteers logged more than 17,800 hours during 2007.

VAQS continued several research projects that have been ongoing for many years. The 14th annual Dolphin Count was conducted in July. Bottlenose dolphins were recorded by shore-based and boat-based observers along Virginia's ocean coast. While not a scientific abundance study, the results of the annual dolphin count indicate the importance of Virginia's coastal waters as habitat for bottlenose dolphins. Photo-identification research on bottlenose dolphins continued for the 19th year. The photo-ID catalog now contains more than 1250 individual dolphins, some of which are regular visitors to Virginia and have been observed in multiple years. VAQS continued to curate the Mid-Atlantic Humpback Whale Photo-Identification Catalog. Results of matching efforts between the mid-Atlantic catalog and others from the western North Atlantic continues to result in new data about the origin of many whales observed in our area (Barco *et al.* 2002). The catalog contains images from stranded and live whales observed in coastal waters from New Jersey through North Carolina. VAQS initiated a pilot project working with a pound net fisherman in the Chesapeake Bay. This pilot study will become a full experimental effort in 2008 to examine an alternate design for a pound net leader that will reduce or eliminate the accidental entanglement of bottlenose dolphins. VAQS staff continues to conduct advanced necropsies on fresh-dead sea turtles to investigate causes of mortalities and to determine baseline health information for regional populations. Finally, nutritional and growth studies continued with sea turtles in the Virginia Aquarium's long-term and short-term collections.

## SUMMARY

Data collected by VAQS and the Virginia stranding network continue to be critical to the long-term monitoring of sea turtle and marine mammal populations. Fresh-stranded cetaceans continue to be extensively sampled as part of a cooperative research project (involving the University of North Carolina at Wilmington, Duke University and the NC State Vet School) to better assess marine mammal health. These types of studies are crucial to developing a better understanding of the overall health status of marine mammal populations in the wild. Stranding records from Virginia indicate that marine mammal strandings, particularly bottlenose dolphins, remain high and that a significant percentage of the mortalities are related to human activities such as commercial fishing. For this reason, VAQS staff serves as expert members on three federal Take Reduction Teams to reduce the incidental mortalities of marine mammals in commercial fishing operations. Sea turtle strandings declined dramatically in 2005-2007 and the trend will require further study to determine why. Monitoring stranding activity in 2007 should provide further valuable information to help understand if this decline represents a significant trend, or represents only a temporary change. The VAQS continues to work closely to monitor and investigate the high rates of sea turtle strandings on Virginia's eastern shore. In addition, data collected from strandings provides excellent information on life histories of the many species of marine mammals and sea turtles that inhabit Virginia waters. Stranded animals are the only source of this type of scientific information for most species of marine mammals. The sei whale and True's beaked whale strandings in 2003 provide excellent examples of the unique opportunities that strandings provide to study rare and previously unknown species from Virginia.

The VAQS Stranding Center has increased its role in the rescue and rehabilitation of sea turtles, seals and cetaceans. The high level of live stranding responses continued in 2007 and the need for a fully functional response and rehabilitation facility is clear. VAQS is planning to continue its efforts on behalf of live stranded sea turtles and marine mammals in Virginia and northeastern North Carolina and plans are being developed for a larger and better-equipped stranding facility.

Marine mammal and sea turtle stranding numbers in Virginia were relatively high during 2007. Sea turtles continue to strand in high numbers and the number of bottlenose dolphin strandings recorded by VAQS remain high. Continued monitoring and reporting of these trends in strandings of protected species will be priorities for the stranding network in 2008.

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Table 1: Marine mammal strandings in Virginia during 2007, n=85.  
 (Data from the VAQS Marine Mammal Stranding Database)  
 [Length=cm; \* indicates estimated length, ND = no data; U= unknown]

Field Number	Date	Species	City/County	Latitude	Longitude	Cond.	Length	Sex
VAQS20071001	21-Jan-07	common dolphin	Virginia Beach	36.5702	-75.8719	dead	200	F
VAQS20071002	10-Feb-07	harp seal	Accomack	38.0189	-75.2499	live	109.2	M
VAQS20071003	22-Feb-07	harp seal	Virginia Beach	36.9190	-76.0551	live	109	F
VAQS20071004	27-Feb-07	harbor porpoise	Virginia Beach	36.6388	-75.8952	dead	118.8	M
VAQS20071005	27-Feb-07	pygmy sperm whale	Virginia Beach	36.6842	-75.9182	live	202.9	F
VAQS20071006	27-Feb-07	pygmy sperm whale	Virginia Beach	36.6807	-75.9166	dead	263	F
VAQS20071006F	27-Feb-07	pygmy sperm whale	Virginia Beach	36.6807	-75.9166	dead	49	F
VAQS20071007	4-Mar-07	harbor porpoise	Virginia Beach	36.6914	-75.9221	dead	112.3	F
VAQS20071008	12-Mar-07	humpback whale	Virginia Beach	36.6398	-75.8726	live	ND	U
VAQS20071009	14-Mar-07	Risso's dolphin	Accomack	37.5041	-75.6513	dead	258	F
VAQS20071010	19-Mar-07	harbor porpoise	Accomack	37.6468	-75.5960	dead	ND	U
VAQS20071011	25-Mar-07	fin whale	Norfolk	36.8792	-76.3506	dead	1798.2	F
VAQS20071012	26-Mar-07	common dolphin	Virginia Beach	36.6906	-75.9216	dead	227	F
VAQS20071013	28-Mar-07	harp seal	Virginia Beach	36.6274	-75.8900	dead	99.2	F
VAQS20071014	1-Apr-07	harbor porpoise	Virginia Beach	36.6891	-75.9212	dead	112	F
VAQS20071015	10-Apr-07	harbor porpoise	Virginia Beach	36.8488	-75.9753	dead	123	M
VAQS20071016	12-Apr-07	harbor porpoise	Virginia Beach	36.7270	-75.9361	dead	115.5	F
VAQS20071017	13-Apr-07	harbor porpoise	Virginia Beach	36.6038	-75.8803	dead	107	M
VAQS20071018	20-Apr-07	harp seal	Accomack	37.6858	-75.6225	dead	ND	M
VAQS20071019	20-Apr-07	harp seal	Accomack	38.0340	-75.2360	live	108	M
VAQS20071020	21-Apr-07	harbor porpoise	Virginia Beach	36.8413	-75.9714	dead	124	F
VAQS20071021	27-Apr-07	bottlenose dolphin	Hampton	37.0388	-76.2909	dead	237	F
VAQS20071022	24-Apr-07	bottlenose dolphin	Accomack	37.7055	-75.5765	dead	268	F
VAQS20071023	22-Apr-07	bottlenose dolphin	Accomack	37.7816	-75.5353	dead	230	F
VAQS20071024	23-Apr-07	common dolphin	Northampton	37.1902	-75.8192	dead	ND	U
VAQS20071025	25-Apr-07	Gervais' beaked whale	Accomack	37.5117	-75.6461	dead	450	F
VAQS20071026	3-May-07	unknown seal	Accomack	37.8193	-75.5009	dead	ND	U
VAQS20071027	9-May-07	bottlenose dolphin	Northampton	37.1277	-75.9698	dead	255	F
VAQS20071028	10-May-07	humpback whale	Accomack	37.6290	-75.3915	dead	ND	F
VAQS20071029	11-May-07	harp seal	Accomack	37.7187	-75.5707	dead	ND	U
VAQS20071030	13-May-07	bottlenose dolphin	Virginia Beach	36.5893	-75.8763	dead	133.4	F
VAQS20071031	13-May-07	bottlenose dolphin	Northampton	37.1763	-75.9892	dead	179	M
VAQS20071032	12-Apr-07	harp seal	Hampton	37.1200	-76.2900	dead	ND	U
VAQS20071033	19-May-07	bottlenose dolphin	Virginia Beach	36.9312	-76.0373	dead	106.7	M
VAQS20071034	21-May-07	bottlenose dolphin	Accomack	37.8750	-75.3500	dead	97.5	U
VAQS20071035	22-May-07	bottlenose dolphin	Virginia Beach	36.7210	-75.9337	dead	181.6	M
VAQS20071036	23-May-07	bottlenose dolphin	Accomack	37.6042	-75.9216	dead	ND	F
VAQS20071037	24-May-07	bottlenose dolphin	Northampton	37.2195	-76.0134	dead	272	M
VAQS20071038	31-May-07	bottlenose dolphin	Accomack	37.8608	-75.3663	dead	215	U
VAQS20071039	1-Jun-07	bottlenose dolphin	Northampton	37.0825	-75.9683	dead	107	F
VAQS20071040	2-Jun-07	bottlenose dolphin	Virginia Beach	36.9225	-76.0546	dead	224	M
VAQS20071041	2-Jun-07	bottlenose dolphin	Accomack	37.5242	-75.6366	dead	ND	U
VAQS20071042	4-Jun-07	bottlenose dolphin	Gloucester	37.2681	-76.5085	dead	254	F
VAQS20071043	11-Jun-07	bottlenose dolphin	Virginia Beach	36.9107	-75.9921	live	111.4	F
VAQS20071044	17-Jun-07	gray seal	Norfolk	36.9634	-76.2652	dead	108.2	M
VAQS20071045	17-Jun-07	bottlenose dolphin	Accomack	37.6158	-75.6136	dead	ND	U
VAQS20071046	19-Jun-07	bottlenose dolphin	Accomack	37.7610	-75.5429	dead	167	M
VAQS20071047	23-Jun-07	bottlenose dolphin	Virginia Beach	36.9377	-76.0386	dead	220	M
VAQS20071048	23-Jun-07	bottlenose dolphin	Northampton	37.3390	-76.0078	dead	244	F
VAQS20071049	26-Jun-07	common dolphin	Northampton	37.3505	-75.7291	dead	213	U

Table 1: Marine mammals Strandings *cont.*

Field Number	Date	Species	City/County	Latitude	Longitude	Cond.	Length	Sex
VAQS20071050	3-Jul-07	pygmy sperm whale	Virginia Beach	36.6258	-75.8891	live	244	F
VAQS20071051	3-Jul-07	pygmy sperm whale	Virginia Beach	36.6312	-75.8915	dead	114.1	M
VAQS20071052	3-Jul-07	bottlenose dolphin	Matthews	37.3096	-76.2786	dead	225	U
VAQS20071053	8-Jul-07	bottlenose dolphin	Accomack	37.9222	-75.3204	dead	109	U
VAQS20071054	8-Jul-07	bottlenose dolphin	Virginia Beach	36.9006	-76.0870	dead	197.2	M
VAQS20071055	8-Jul-07	bottlenose dolphin	Norfolk	36.9230	-76.1412	dead	265	M
VAQS20071056	14-Jul-07	bottlenose dolphin	Virginia Beach	36.9320	-76.0298	dead	181	M
VAQS20071057	17-Jul-07	bottlenose dolphin	Virginia Beach	36.9248	-76.0482	dead	203.4	M
VAQS20071058	17-Jul-07	bottlenose dolphin	Virginia Beach	36.9220	-76.0540	dead	197	F
VAQS20071059	20-Jul-07	bottlenose dolphin	Virginia Beach	37.8000	-75.5100	dead	242	F
VAQS20071060	22-Jul-07	bottlenose dolphin	Virginia Beach	36.9228	-76.1405	dead	103.9	M
VAQS20071061	25-Jul-07	bottlenose dolphin	Hampton	37.0100	-76.3608	dead	109.5	F
VAQS20071062	25-Jul-07	bottlenose dolphin	Accomack	37.7402	-75.5595	dead	208	F
VAQS20071063	31-Jul-07	bottlenose dolphin	Virginia Beach	36.7239	-75.9350	dead	152	F
VAQS20071064	1-Aug-07	bottlenose dolphin	Virginia Beach	36.9225	-76.0546	dead	198	F
VAQS20071065	7-Aug-07	bottlenose dolphin	Northampton	37.2022	-76.0114	dead	105.5	F
VAQS20071066	7-Aug-07	bottlenose dolphin	Northampton	37.2027	-76.0117	dead	185	F
VAQS20071067	11-Aug-07	bottlenose dolphin	Virginia Beach	36.9064	-76.1894	dead	ND	U
VAQS20071068	11-Aug-07	bottlenose dolphin	Virginia Beach	36.8554	-75.9751	dead	120.5	M
VAQS20071069	18-Aug-07	bottlenose dolphin	Northampton	37.1063	-75.9742	dead	260*	U
VAQS20071070	20-Aug-07	bottlenose dolphin	Virginia Beach	36.9269	-76.0464	dead	203	F
VAQS20071071	28-Aug-07	bottlenose dolphin	Virginia Beach	36.5574	-75.8693	dead	222	U
VAQS20071072	31-Aug-07	bottlenose dolphin	Newport News	36.9465	-76.3530	dead	243	M
VAQS20071073	2-Sep-07	bottlenose dolphin	Virginia Beach	36.6548	-75.9045	dead	215	F
VAQS20071074	12-Sep-07	bottlenose dolphin	Accomack	37.5244	-75.6364	dead	221*	M
VAQS20071075	14-Sep-07	bottlenose dolphin	Norfolk	36.9298	-76.1877	dead	269.7	M
VAQS20071076	15-Sep-07	bottlenose dolphin	Virginia Beach	36.7574	-75.9474	dead	261	M
VAQS20071077	26-Sep-07	bottlenose dolphin	Accomack	37.9555	-75.2992	dead	172	M
VAQS20071078	28-Sep-07	bottlenose dolphin	Virginia Beach	36.9214	-76.0519	dead	217	M
VAQS20071079	1-Oct-07	bottlenose dolphin	Virginia Beach	36.9215	-75.9962	dead	215	F
VAQS20071080	2-Oct-07	bottlenose dolphin	Virginia Beach	36.9110	-76.1030	dead	158.3	F
VAQS20071081	4-Oct-07	pygmy sperm whale	Northampton	37.0930	-75.9382	dead	275	F
VAQS20071082	16-Oct-07	bottlenose dolphin	Virginia Beach	36.8494	-75.9758	dead	160	M
VAQS20071083	29-Nov-07	common dolphin	Northampton	37.0914	-75.9384	dead	212	M
VAQS20071084	10-Dec-07	bottlenose dolphin	Northampton	36.9215	-75.9962	dead	215.5	U
VAQS20071085	30-Dec-07	harbor seal	Accomack	37.8898	-75.3402	live	108.5	M

Table 2: Live stranded marine mammals handled by VAQS in 2007.

<u>Field Number</u>	<u>Species</u>	<u>Strand Date</u>	<u>State</u>	<u>Disposition</u>
BRF106	dwarf sperm whale	1/9/2007	NC	Died 9 January, 2007
VAQS20071002	harp seal	1/10/2007	VA	Died 12 January, 2007
VAQS20071003	harp seal	2/22/2007	VA	Released 20 March, 2007
VAQS20071005	pygmy sperm whale	2/27/2007	VA	Euthanized 27 February, 2007
BRF114	harbor porpoise	3/1/2007	NC	Released 10 July, 2007
VAQS20071008	humpback whale	3/12/2007	VA	Disentangled 12 March, 2007
BRF130	harbor porpoise (*a)	3/17/2007	NC	Transferred 17 March, 2007
LRD001	harbor seal	3/21/2007	NC	Released 25 April, 2007
VAQS20071019	harp seal	4/20/2007	VA	Released 19 May, 2007
BRF155	gray seal (*a)	5/14/2007	NC	Released 17 June, 2007
VAQS20071043	bottlenose dolphin	6/11/2007	VA	Died 11 June, 2007
VAQS20071050	pygmy sperm whale	7/3/2007	VA	Euthanized 3 July, 2007
BRF164	bottlenose dolphin	7/23/2007	NC	Died 23 July, 2007
BRF168	harbor seal	10/29/2007	NC	Released 5 December, 2007
VAQS20071085	harbor seal	12/30/2007	VA	In rehab, release pending

(\*a)=transferred to Riverhead Foundation, Riverhead, NY

Table 3: Virginia sea turtle strandings recorded by VAQS and cooperators (VASC, VDGIF, ECO, VIMS) in 2007, n=177. (Data from the VAQS Sea Turtle Stranding Database)

[Length = carapace length notch to tip cm; \* = estimate; ND = no data; U = unknown]

Field Number	Date	Species	City/County	Latitude	Longitude	Condition	Length	Sex
VAQS20072001	3-Jan-07	green	Virginia Beach	36.5540	-75.8697	dead	32	F
VAQS20072002	1-Feb-07	loggerhead	Norfolk	36.8435	-76.2923	live	70	U
VDGIF2007001	3-Apr-07	Kemp's ridley	Accomack	37.7397	-75.8300	dead	ND	U
VAQS20072003	26-May-07	loggerhead	Northampton	37.1070	-75.9504	dead	69	F
VAQS20072004	27-May-07	loggerhead	Northampton	37.0991	-75.9803	dead	71	F
VAQS20072005	30-May-07	loggerhead	Virginia Beach	36.9200	-76.0500	dead	76	F
VAQS20072024	31-May-07	loggerhead	Northampton	37.1847	-75.8268	dead	78*	U
VAQS20072006	1-Jun-07	loggerhead	Norfolk	36.9900	-76.3018	dead	81	F
VAQS20072007	1-Jun-07	loggerhead	Northampton	37.0878	-75.9762	dead	62	F
VAQS20072008	1-Jun-07	loggerhead	Northampton	37.1610	-75.9795	dead	ND	U
VAQS20072009	3-Jun-07	loggerhead	Hampton	37.0612	-76.2819	dead	80	F
VAQS20072010	4-Jun-07	Kemp's ridley	Virginia Beach	36.9278	-76.0070	dead	40	F
VAQS20072011	6-Jun-07	loggerhead	Virginia Beach	36.9270	-76.1640	dead	81	F
VAQS20072012	6-Jun-07	loggerhead	Northampton	37.0877	-75.9548	dead	64	U
VAQS20072013	6-Jun-07	loggerhead	Northampton	37.0877	-75.9755	dead	83	M
VAQS20072014	7-Jun-07	loggerhead	Virginia Beach	36.9317	-76.0286	dead	65	F
VAQS20072015	7-Jun-07	loggerhead	Virginia Beach	36.9286	-76.0081	dead	ND	U
VAQS20072016	7-Jun-07	loggerhead	Virginia Beach	36.9111	-75.9899	dead	ND	U
VAQS20072017	7-Jun-07	loggerhead	Virginia Beach	36.9255	-76.1541	dead	63	M
VAQS20072018	7-Jun-07	loggerhead	Virginia Beach	36.9268	-76.1593	dead	79	F
VAQS20072019	8-Jun-07	loggerhead	Northampton	37.4004	-75.9646	dead	75	M
VAQS20072027	10-Jun-07	Kemp's ridley	Virginia Beach	36.6696	-75.9107	dead	53	U
VAQS20072025	10-Jun-07	leatherback	Virginia Beach	36.5911	-75.8767	dead	152	U
VAQS20072020	10-Jun-07	loggerhead	Norfolk	36.9596	-76.2583	dead	69	F
VAQS20072021	10-Jun-07	loggerhead	Norfolk	36.9570	-76.2533	dead	73	U
VAQS20072022	10-Jun-07	loggerhead	Virginia Beach	36.6627	-75.9066	dead	57	M
VAQS20072023	10-Jun-07	loggerhead	Virginia Beach	36.7183	-75.9332	dead	ND	M
VAQS20072026	10-Jun-07	loggerhead	Virginia Beach	36.5533	-75.8683	dead	82	F
VAQS20072028	10-Jun-07	loggerhead	Virginia Beach	36.6797	-75.9163	dead	71	F
VAQS20072029	11-Jun-07	loggerhead	Virginia Beach	36.9276	-76.0453	dead	69	F
VAQS20072030	11-Jun-07	loggerhead	Virginia Beach	36.9307	-76.0198	dead	69	M
VASC20072001	12-Jun-07	Kemp's ridley	Northampton	37.0841	-75.9681	dead	25	F
VAQS20072031	12-Jun-07	loggerhead	Norfolk	36.9640	-76.2664	dead	67	M
VAQS20072032	12-Jun-07	loggerhead	Northampton	37.2677	-76.0234	dead	ND	F
VAQS20072033	12-Jun-07	loggerhead	Virginia Beach	36.7495	-75.9448	dead	92	F
VAQS20072034	13-Jun-07	loggerhead	Norfolk	36.9495	-76.2418	dead	81	F
VAQS20072035	13-Jun-07	loggerhead	Norfolk	36.9630	-76.2643	dead	ND	F
VAQS20072036	13-Jun-07	loggerhead	Virginia Beach	36.9317	-76.0260	dead	64	F
VASC20072002	13-Jun-07	loggerhead	Accomack	37.8792	-75.3480	dead	73	F
VASC20072003	13-Jun-07	loggerhead	Virginia Beach	36.7263	-75.9360	dead	73	M
VAQS20072037	15-Jun-07	loggerhead	Virginia Beach	36.9121	-75.9907	dead	70	F
VAQS20072038	15-Jun-07	loggerhead	Norfolk	36.9400	-76.2238	dead	69	F
VAQS20072039	16-Jun-07	loggerhead	Norfolk	36.9667	-76.2200	dead	73	F

Table 3: Sea turtle strandings *cont.*

Field Number	Date	Species	City/County	Latitude	Longitude	Condition	Length	Sex
VAQS20072040	17-Jun-07	loggerhead	Northampton	37.1661	-75.9881	dead	70	F
VAQS20072042	18-Jun-07	loggerhead	Northampton	37.2516	-76.0231	dead	55	U
VAQS20072041	19-Jun-07	loggerhead	Virginia Beach	36.8906	-75.9854	dead	62	F
VAQS20072043	21-Jun-07	Kemp's ridley	Northampton	37.0843	-75.9686	dead	34	F
VAQS20072044	21-Jun-07	loggerhead	Northampton	37.1073	-75.9507	dead	49	F
VAQS20072045	23-Jun-07	loggerhead	Norfolk	36.9499	-76.2437	dead	55	U
VAQS20072046	24-Jun-07	loggerhead	Virginia Beach	36.9099	-75.9889	dead	80	F
VDGIF2007002	25-Jun-07	loggerhead	Accomack	37.6616	-75.5919	dead	ND	U
VDGIF2007003	25-Jun-07	loggerhead	Accomack	37.6506	-75.5951	dead	ND	U
VASC20072004	26-Jun-07	loggerhead	Northampton	37.0861	-75.9458	dead	ND	U
VASC20072007	28-Jun-07	loggerhead	Northampton	37.0826	-75.9668	dead	ND	U
VDGIF2007004	29-Jun-07	loggerhead	northampton	37.2471	-75.8045	dead	ND	U
VDGIF2007005	3-Jul-07	loggerhead	northampton	37.1724	-75.8342	dead	ND	U
VDGIF2007008	3-Jul-07	loggerhead	northampton	37.2163	-75.8091	dead	ND	U
VASC20072008	5-Jul-07	green	Northampton	37.0825	-75.9633	dead	27	M
VDGIF2007006	6-Jul-07	loggerhead	Accomack	37.7640	-75.5407	dead	ND	U
VDGIF2007007	6-Jul-07	loggerhead	Accomack	37.6577	-75.5928	dead	ND	U
VAQS20072047	8-Jul-07	loggerhead	Northampton	37.0854	-76.0414	dead	ND	U
VAQS20072048	8-Jul-07	loggerhead	Virginia Beach	36.7921	-75.9596	dead	ND	U
VAQS20072049	9-Jul-07	loggerhead	Northampton	37.1582	-75.9779	dead	95	U
VASC20072005	12-Jul-07	loggerhead	Accomack	37.9892	-75.2725	dead	97	M
VAQS20072050	13-Jul-07	loggerhead	Virginia Beach	36.9264	-76.0502	dead	ND	F
VAQS20072054	13-Jul-07	loggerhead	Accomack	37.8681	-75.4449	dead	ND	U
VASC20072006	13-Jul-07	unidentified	Accomack	37.9546	-75.2999	dead	ND	U
VAQS20072051	14-Jul-07	loggerhead	Virginia Beach	36.6543	-75.9022	dead	ND	U
VAQS20072052	14-Jul-07	loggerhead	Virginia Beach	36.9112	-76.0716	dead	ND	F
VAQS20072053	15-Jul-07	loggerhead	Virginia Beach	36.9190	-76.0543	dead	72	U
VASC20072009	16-Jul-07	Kemp's ridley	Northampton	37.1229	-75.9692	dead	ND	U
VASC20072010	17-Jul-07	green	Northampton	37.1023	-75.9789	dead	ND	U
VASC20072011	21-Jul-07	loggerhead	Accomack	37.8268	-75.4930	dead	ND	U
VASC20072012	21-Jul-07	loggerhead	Accomack	37.8239	-75.4966	dead	70	U
VAQS20072055	25-Jul-07	green	Virginia Beach	36.8273	-75.9647	live	101	F
VASC20072013	27-Jul-07	loggerhead	Virginia Beach	36.6581	-75.9041	dead	65	F
VASC20072014	27-Jul-07	loggerhead	Accomack	37.9053	-75.3312	dead	91	U
VASC20072015	27-Jul-07	loggerhead	Accomack	37.8568	-75.3882	dead	102	U
VAQS20072057	28-Jul-07	loggerhead	Hampton	37.0173	-76.2976	dead	ND	U
VAQS20072058	28-Jul-07	loggerhead	Virginia Beach	36.9150	-76.1007	dead	68	U
VAQS20072059	28-Jul-07	loggerhead	Northampton	37.0729	-75.9313	dead	ND	U
VAQS20072056	31-Jul-07	loggerhead	Virginia Beach	36.8440	-75.9721	dead	78*	U
VAQS20072060	31-Jul-07	loggerhead	Virginia Beach	36.9146	-76.1164	dead	76	M
VAQS20072069	31-Jul-07	loggerhead	Northampton	37.1407	-75.8731	dead	ND	U
VAQS20072070	31-Jul-07	loggerhead	Northampton	37.1518	-75.8617	dead	ND	U
VDGIF2007009	31-Jul-07	loggerhead	northampton	37.1728	-75.8337	dead	ND	U

Table 3: Sea turtle strandings *cont.*

Field Number	Date	Species	City/County	Latitude	Longitude	Condition	Length	Sex
VAQS20072068	31-Jul-07	unidentified	Northampton	37.1198	-75.8943	dead	ND	U
VAQS20072061	1-Aug-07	loggerhead	Virginia Beach	36.7499	-75.9407	dead	ND	U
VASC20072016	2-Aug-07	green	Accomack	37.8619	-75.3647	dead	26	U
VAQS20072062	4-Aug-07	Kemp's ridley	Smithfield	37.0076	-76.5718	live	56	F
VASC20072017	4-Aug-07	loggerhead	Northampton	37.0823	-75.9624	dead	ND	U
VAQS20072064	5-Aug-07	green	Northampton	37.1654	-75.9848	dead	27	M
Dredge Take	5-Aug-07	Kemp's ridley	Northampton	37.2350	-76.1333	dead	24	M
VAQS20072063	6-Aug-07	loggerhead	Northampton	37.1513	-75.9754	dead	61	F
VAQS20072065	11-Aug-07	loggerhead	Virginia Beach	36.8524	-75.9746	dead	ND	U
VAQS20072066	11-Aug-07	loggerhead	Virginia Beach	36.7368	-75.9402	dead	ND	U
VAQS20072067	14-Aug-07	loggerhead	Norfolk	36.9481	-76.2399	dead	ND	U
VASC20072018	15-Aug-07	Kemp's ridley	Virginia Beach	36.7391	-75.9409	dead	ND	U
VAQS20072071	18-Aug-07	loggerhead	Northampton	37.2677	-76.0237	dead	ND	U
VAQS20072072	18-Aug-07	loggerhead	Virginia Beach	36.6585	-75.9044	dead	ND	U
VAQS20072073	22-Aug-07	loggerhead	Virginia Beach	36.6615	-75.9061	dead	65	F
VAQS20072074	22-Aug-07	loggerhead	Virginia Beach	36.6005	-75.8811	dead	ND	U
VAQS20072075	23-Aug-07	loggerhead	Virginia Beach	36.8916	-75.9858	dead	ND	U
VIMS MT 08-24-07	24-Aug-07	loggerhead	Hampton	37.0060	-76.3362	live	80	F
VAQS20072079	27-Aug-07	green	Norfolk	36.9381	-76.2188	dead	ND	U
VAQS20072077	27-Aug-07	loggerhead	Virginia Beach	36.6203	-75.8861	dead	101	U
VAQS20072078	27-Aug-07	loggerhead	Virginia Beach	36.8067	-75.9639	dead	64	U
VAQS20072080	28-Aug-07	loggerhead	Virginia Beach	36.8523	-75.9747	dead	75	F
VAQS20072081	1-Sep-07	loggerhead	Virginia Beach	36.9189	-76.0553	dead	ND	U
VAQS20072083	2-Sep-07	green	Northampton	37.1485	-75.9747	dead	29	U
VAQS20072082	2-Sep-07	loggerhead	Virginia Beach	36.7100	-75.9295	dead	69	F
VAQS20072084	2-Sep-07	loggerhead	Virginia Beach	36.9188	-76.0554	live	61	M
VAQS20072085	3-Sep-07	loggerhead	Virginia Beach	36.7285	-75.9364	dead	90	M
VASC20072019	5-Sep-07	loggerhead	Northampton	37.1063	-75.9741	dead	ND	U
VASC20072020	6-Sep-07	unidentified	Northampton	37.1062	-75.9741	dead	ND	U
VIMS MT 09-08-07	8-Sep-07	loggerhead	Hampton	37.0400	-76.2900	dead	59	F
VAQS20072076	10-Sep-07	loggerhead	Virginia Beach	36.9188	-76.0552	dead	ND	F
VAQS20072087	10-Sep-07	loggerhead	Virginia Beach	36.9144	-75.9909	dead	97	M
VDGIF2007010	11-Sep-07	loggerhead	Accomack	37.5531	-75.6141	dead	ND	U
VAQS20072088	12-Sep-07	loggerhead	Northampton	37.1174	-75.9684	dead	73	F
VAQS20072086	15-Sep-07	loggerhead	Virginia Beach	36.7358	-75.9400	dead	70	F
VAQS20072089	16-Sep-07	loggerhead	Virginia Beach	36.7421	-75.9422	live	50	F
VAQS20072090	18-Sep-07	loggerhead	Virginia Beach	36.8692	-75.9793	dead	65	M
VAQS20072091	18-Sep-07	loggerhead	Virginia Beach	36.9160	-76.1209	dead	89	F
VAQS20072092	19-Sep-07	loggerhead	Norfolk	36.9688	-76.2847	dead	94	F
VAQS20072093	19-Sep-07	loggerhead	Virginia Beach	36.8712	-75.9801	dead	61	F
VAQS20072094	20-Sep-07	loggerhead	Virginia Beach	36.7419	-75.9421	dead	64	F
VASC20072021	20-Sep-07	loggerhead	Accomack	37.9964	-75.2675	dead	73	U
VDGIF2007011	25-Sep-07	loggerhead	Accomack	37.5699	-75.6248	dead	ND	F

Table 3: Sea turtle strandings *cont.*

Field Number	Date	Species	City/County	Latitude	Longitude	Condition	Length	Sex
VAQS20072095	26-Sep-07	loggerhead	Virginia Beach	36.7508	-75.9449	dead	65	F
VASC20072022	28-Sep-07	loggerhead	Accomack	37.9406	-75.3094	dead	90	M
VAQS20072096	30-Sep-07	Kemp's ridley	Norfolk	36.6542	-75.9021	dead	48	F
VAQS20072097	30-Sep-07	Kemp's ridley	Virginia Beach	36.9246	-76.0011	dead	43	F
VAQS20072098	2-Oct-07	loggerhead	Virginia Beach	36.7213	-75.9338	dead	ND	U
VAQS20072099	3-Oct-07	loggerhead	Norfolk	36.9628	-76.2642	dead	65	F
VAQS20072100	3-Oct-07	loggerhead	Norfolk	36.9584	-76.2556	dead	81	F
VAQS20072101	3-Oct-07	unidentified	Virginia Beach	36.7610	-75.9489	dead	ND	U
VDGIF2007013	4-Oct-07	leatherback	Accomack	37.6068	-75.6151	dead	129	U
VAQS20072102	4-Oct-07	loggerhead	Virginia Beach	36.9107	-76.1025	dead	79*	U
VAQS20072109	4-Oct-07	loggerhead	Virginia Beach	36.6615	-75.9062	dead	80	U
VASC20072023	4-Oct-07	loggerhead	Virginia Beach	36.6223	-75.8873	dead	67	U
VDGIF2007012	4-Oct-07	unidentified	Accomack	37.6047	-75.6149	dead	ND	U
VAQS20072103	5-Oct-07	loggerhead	Virginia Beach	36.6265	-75.8890	dead	98	F
VAQS20072104	6-Oct-07	green	Virginia Beach	36.9129	-76.0780	dead	29	M
VAQS20072105	7-Oct-07	loggerhead	Norfolk	36.9310	-76.1680	dead	72*	U
VAQS20072106	8-Oct-07	loggerhead	Northampton	37.0482	-76.0614	dead	ND	U
VIMS MT 10-08-07	8-Oct-07	loggerhead	Northumberland	37.8878	-76.2689	live	60	F
VAQS20072107	11-Oct-07	loggerhead	Virginia Beach	36.6139	-75.8838	dead	106	U
VASC20072024	20-Oct-07	loggerhead	Northampton	37.0917	-75.9795	dead	ND	U
VAQS20072108	22-Oct-07	loggerhead	Northampton	37.1997	-76.0106	dead	95	U
VDGIF2007014	23-Oct-07	loggerhead	Accomack	37.7690	-75.5385	dead	75	U
VAQS20072110	25-Oct-07	loggerhead	Virginia Beach	36.6471	-75.8988	dead	56	U
VAQS20072111	29-Oct-07	loggerhead	Virginia Beach	36.5594	-75.8697	dead	ND	F
VAQS20072112	29-Oct-07	loggerhead	Virginia Beach	36.5603	-75.8693	dead	100*	F
VAQS20072113	30-Oct-07	loggerhead	Norfolk	36.9362	-76.2120	dead	ND	U
VAQS20072114	30-Oct-07	loggerhead	Virginia Beach	36.9139	-76.0715	dead	66	U
VAQS20072115	31-Oct-07	loggerhead	Virginia Beach	36.5810	-75.8742	dead	71	U
VAQS20072116	1-Nov-07	Kemp's ridley	Newport News	36.9682	-76.4270	dead	42	M
VAQS20072117	3-Nov-07	Kemp's ridley	Norfolk	36.9523	-76.2464	dead	41	M
VAQS20072118	4-Nov-07	loggerhead	Norfolk	36.9317	-76.1939	dead	72	F
VAQS20072119	5-Nov-07	loggerhead	Virginia Beach	36.7448	-75.9426	dead	66	U
VAQS20072120	8-Nov-07	loggerhead	Norfolk	36.9405	-76.2256	dead	ND	U
VAQS20072121	11-Nov-07	Kemp's ridley	Virginia Beach	36.9183	-76.1284	dead	50	F
VAQS20072122	11-Nov-07	loggerhead	Virginia Beach	36.9160	-76.1207	dead	83	F
VAQS20072123	13-Nov-07	loggerhead	Virginia Beach	36.6046	-75.8806	dead	80	M
VASC20072025	14-Nov-07	green	Accomack	37.8603	-75.3843	dead	31	U
VAQS20072124	14-Nov-07	Kemp's ridley	Virginia Beach	36.8627	-75.9775	dead	36	U
VAQS20072125	15-Nov-07	loggerhead	Portsmouth	36.9107	-76.3526	dead	64	F
VAQS20072126	18-Nov-07	loggerhead	Northampton	37.5799	-75.9307	dead	ND	U
VAQS20072127	29-Nov-07	green	Northampton	37.0875	-75.9755	dead	31	U
VAQS20072128	29-Nov-07	green	Northampton	37.0887	-75.9770	dead	32	U
VAQS20072129	4-Dec-07	loggerhead	Virginia Beach	36.9233	-76.1432	dead	80	U

Table 3: Sea turtle strandings *cont.*

Field Number	Date	Species	City/County	Latitude	Longitude	Condition	Length	Sex
VAQS20072130	12-Dec-07	green	Norfolk	36.8825	-76.2759	dead	31	F
VASC20072026	12-Dec-07	Kemp's ridley	Northampton	37.0903	-75.9783	dead	29	U
VDGIF2007015	29-Dec-07	loggerhead	Accomack	37.5884	-75.9120	dead	80*	U
VAQS20072131	13-Dec-08	green	Virginia Beach	36.5643	-75.8710	dead	28	F
VAQS20072132	24-Dec-08	green	Virginia Beach	36.6726	-75.9125	live	28	U

Table 4: Live stranded sea turtles handled by VAQS in 2007.

<u>Field #</u>	<u>Species</u>	<u>Name</u>	<u>Strand Date</u>	<u>State</u>	<u>Final Disposition</u>
VIMS MT-06-10-10-01	loggerhead	Fred (*a)	10/10/2006	VA	Released 27 June, 2007 from Virginia Beach, VA
VAQS20062132	Kemp's ridley	Mighty Luke	11/24/2006	VA	Released 27 June, 2007 from Virginia Beach, VA
VAQS20072002	loggerhead	CD Chill	2/1/2007	VA	Released 27 June, 2007 from Virginia Beach, VA
VAQS20072055	green	Tiki Jr	7/25/2007	VA	Released 20 October, 2007 from Virginia Beach, VA
VAQS20072062	Kemp's ridley	N/A	8/7/2007	VA	Died 7 August, 2007
MT-07-08-24-01	loggerhead	Robin Leech (*a)	8/24/2007	VA	Died 13 September, 2007
VAQS20072084	loggerhead	O'Charlie	9/2/2007	VA	Died 5 September, 2007
VAQS20072089	loggerhead	Floyd	9/16/2007	VA	Died 17 September, 2007
ST825	loggerhead	Alex (*b)	9/22/2007	DE	Died 25 August, 2007
MT-071008-01	loggerhead	Sweet Louie (*a)	10/8/2007	VA	Died 17 November, 2007
MMSC-07-135	loggerhead	Atlantis (*c)	10/14/2007	NJ	Pending
VAQS20072132	green	Frosty	12/24/2007	VA	Pending

(\*a) = transferred from the Virginia Institute of Marine Science, Gloucester Point, VA

(\*b) = transferred from the Marine Education, Research and Rehabilitation Institute, Nassau, DE

(\*c) = transferred from Marine Mammal Stranding Center, Brigantine, NJ

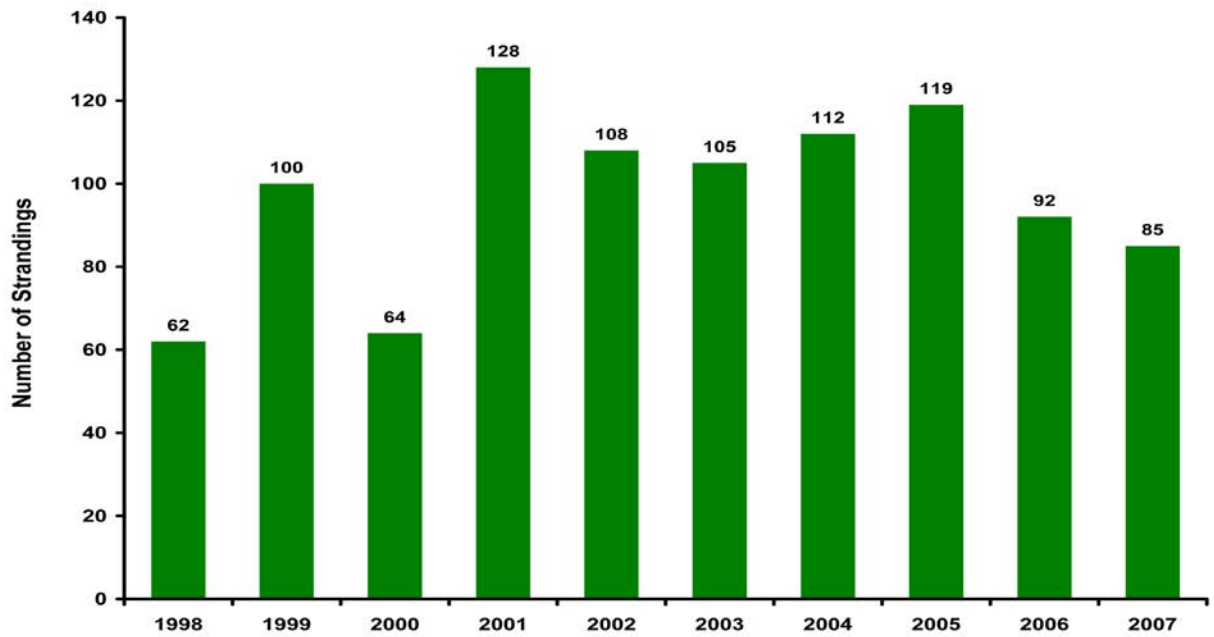


Figure 1: Yearly frequency of marine mammal strandings in Virginia, 1998-2007.

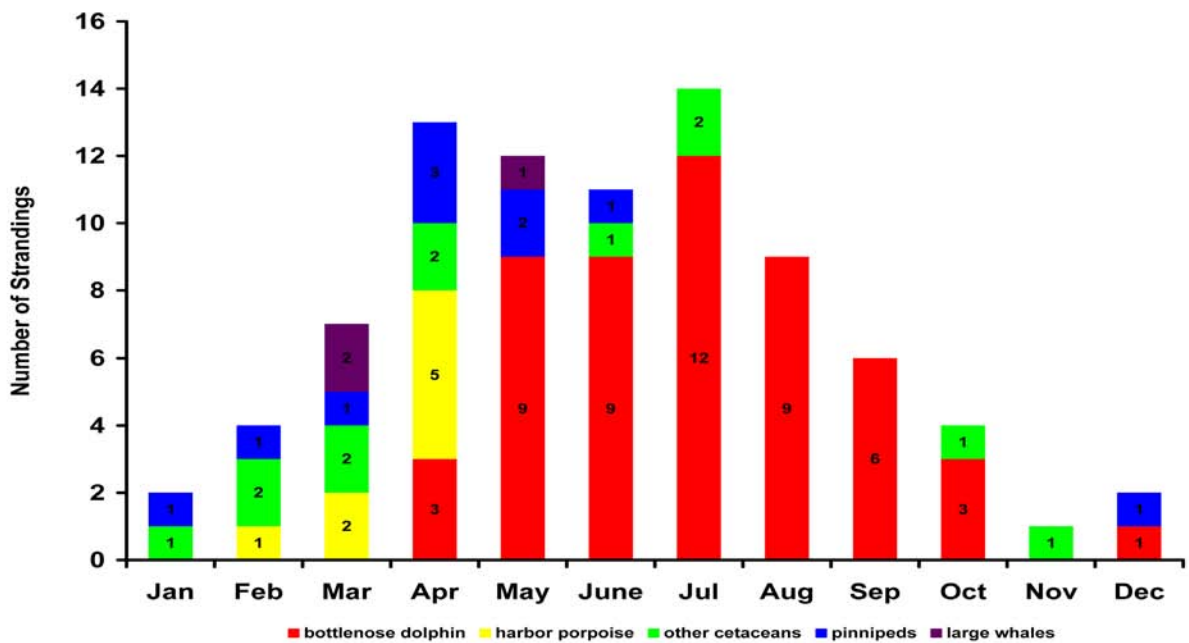


Figure 2: Monthly frequency of marine mammal strandings in Virginia from 2007.

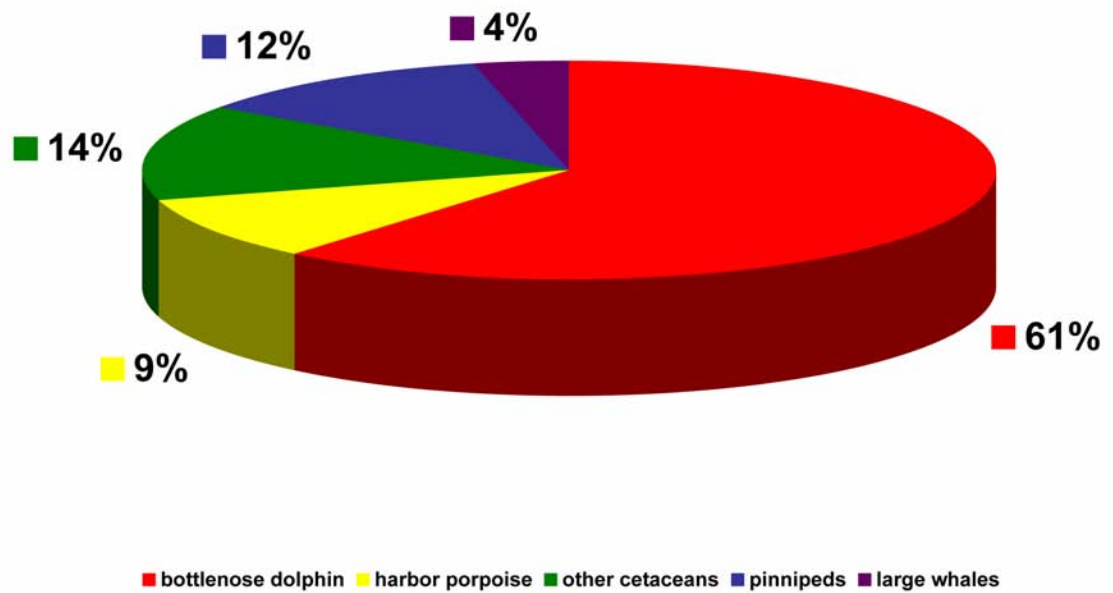


Figure 3: Marine mammal strandings in Virginia from 2007 (bottlenose dolphin n=52, harbor porpoise n=8, other cetaceans n=12, pinnipeds n=10, large whales n=3).

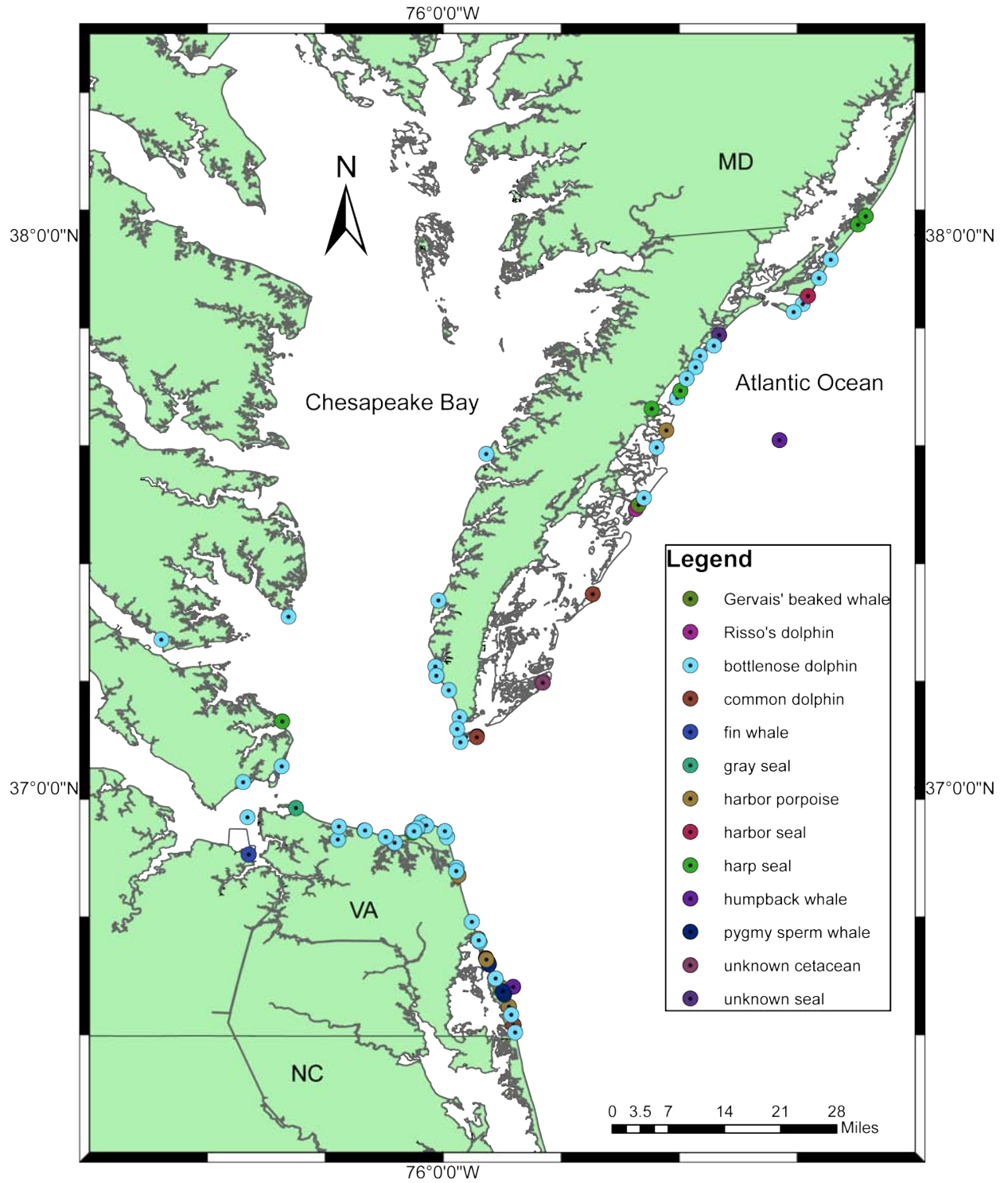
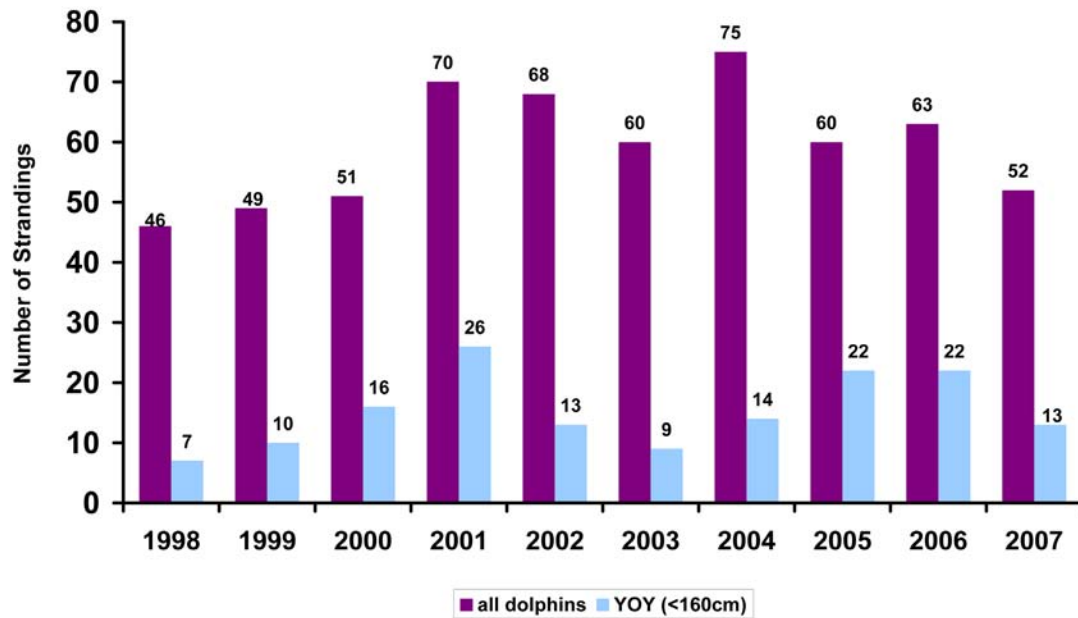


Figure 4: Location of Virginia marine mammal strandings from 2007.

## A: Bottlenose dolphin



## B: Harbor porpoise

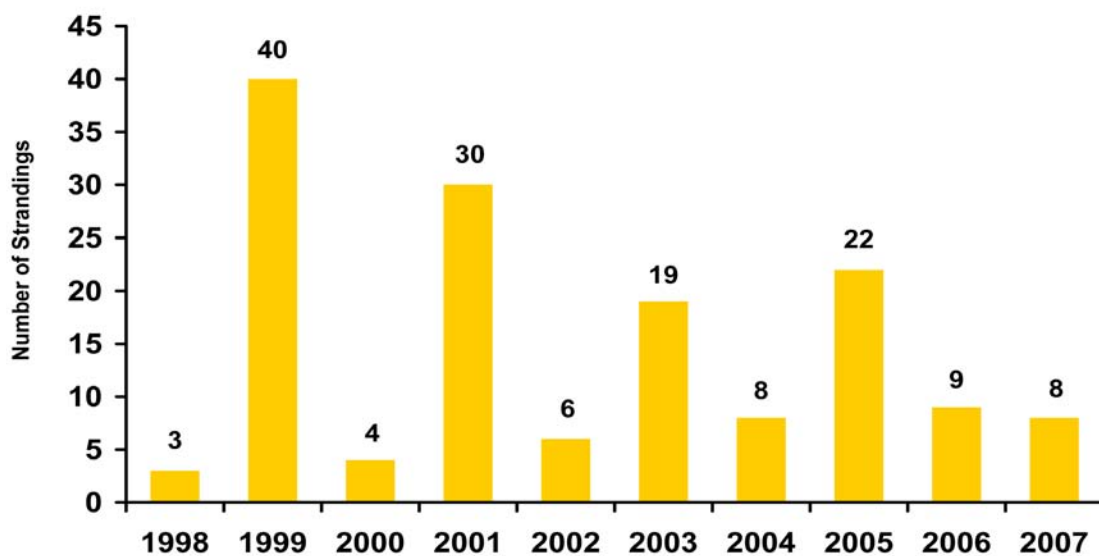


Figure 5A-B: Yearly stranding frequency for bottlenose dolphin and harbor porpoise in Virginia, 1998-2007 (YOY = young of the year).

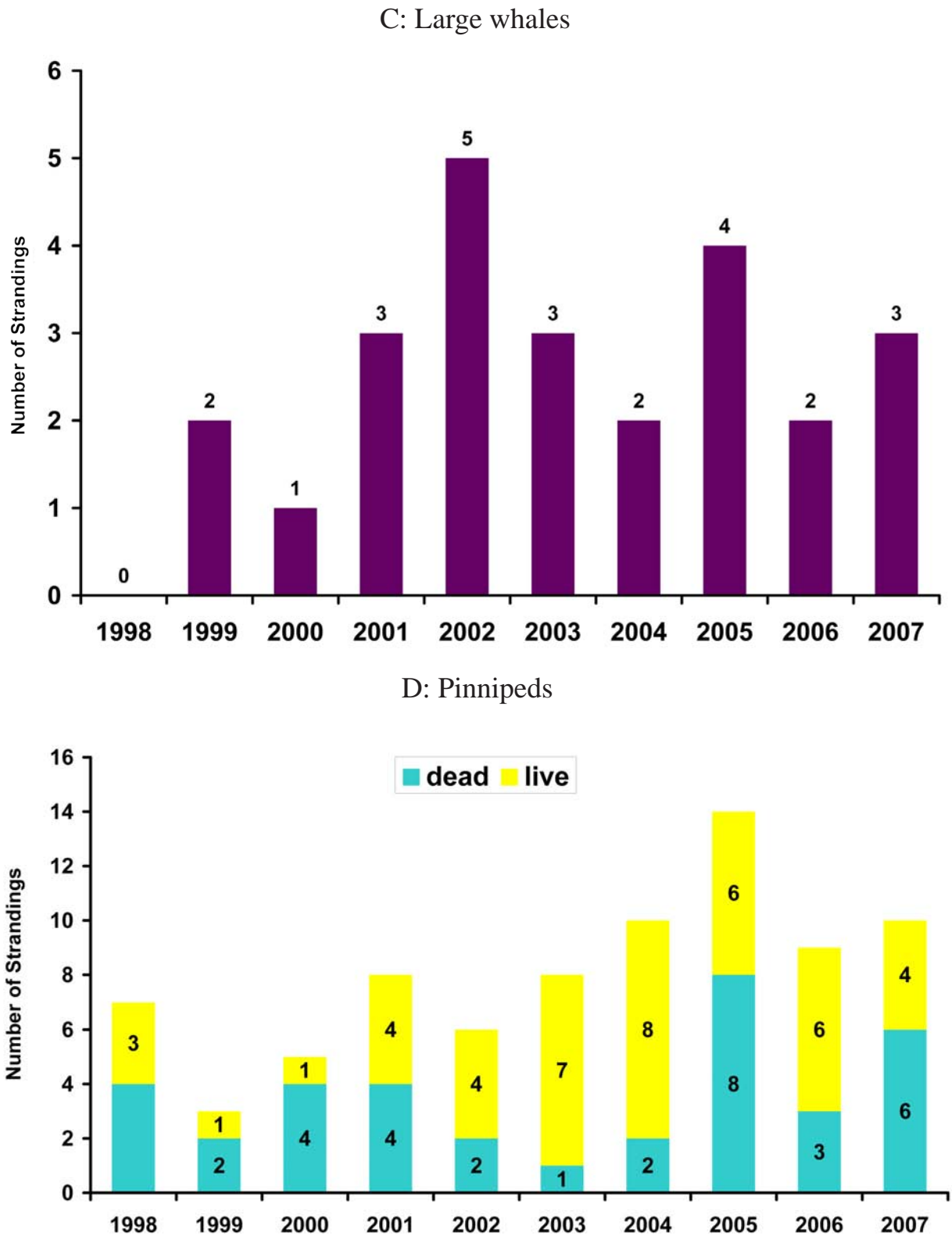


Figure 5 C-D: Yearly stranding frequency for large whales and pinnipeds in Virginia, 1998-2007.

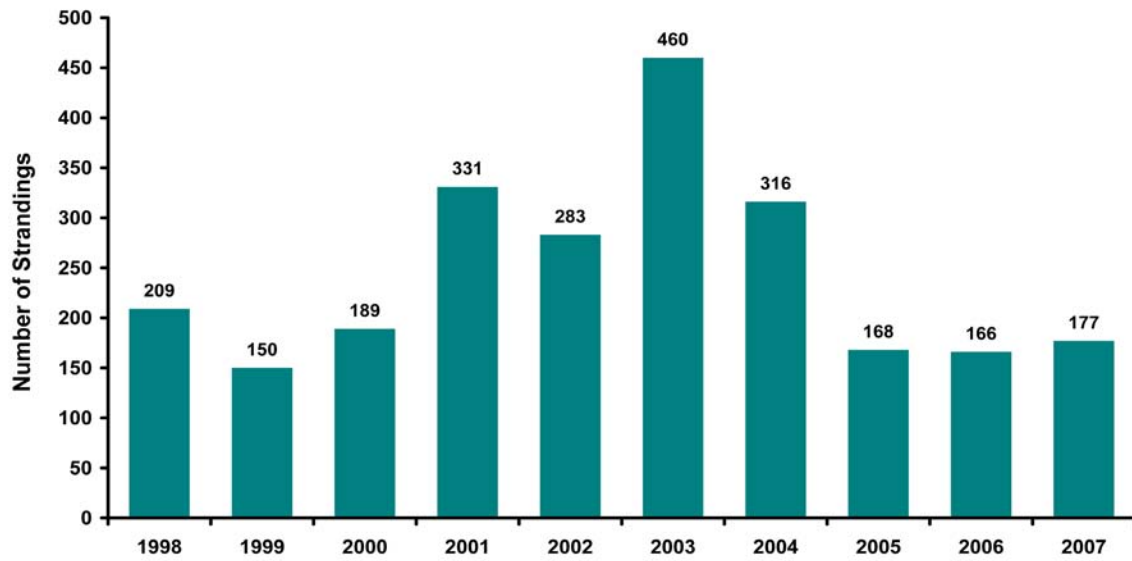


Figure 6: Yearly frequency of sea turtle strandings recorded by VAQS, 1998-2007.

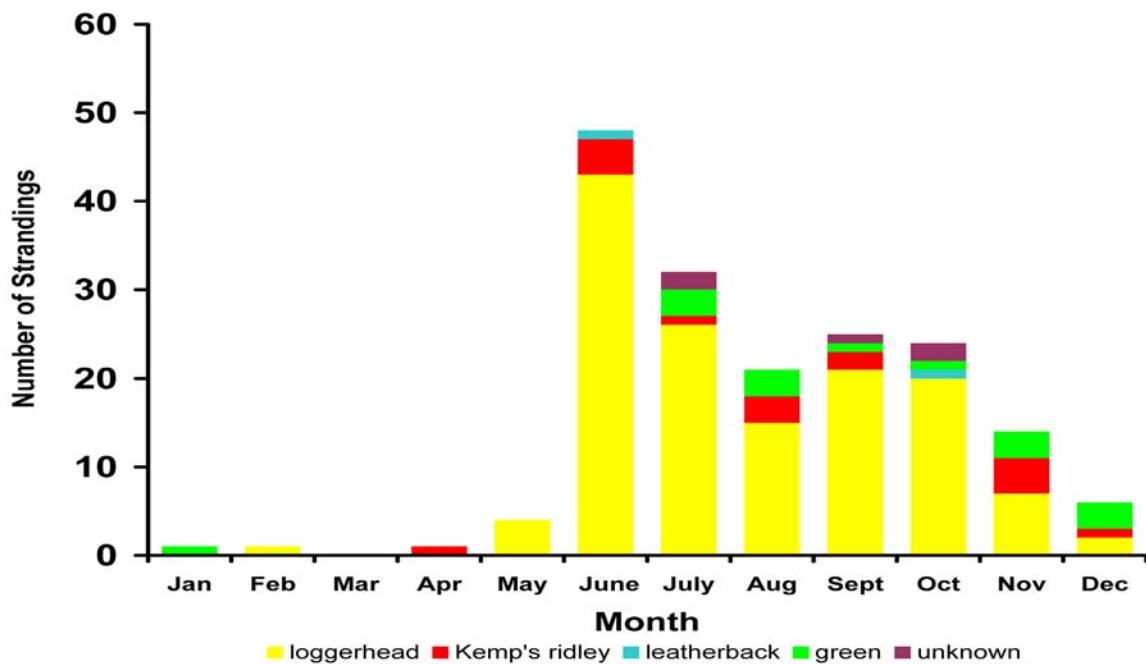


Figure 7: Monthly frequency of sea turtle strandings recorded by VAQS from 2007.

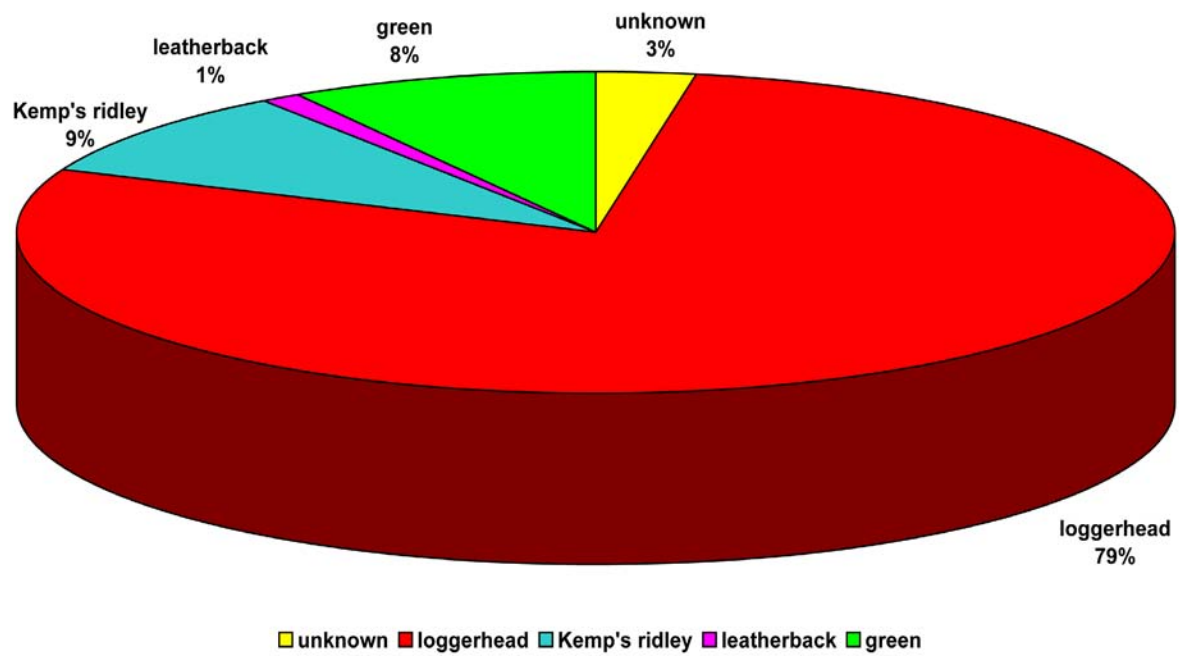


Figure 8: Virginia sea turtle strandings recorded by VAQS from 2007.  
(loggerhead n=139, Kemp's ridley n=16, leatherback n=2, green n=15, unknown n=5)

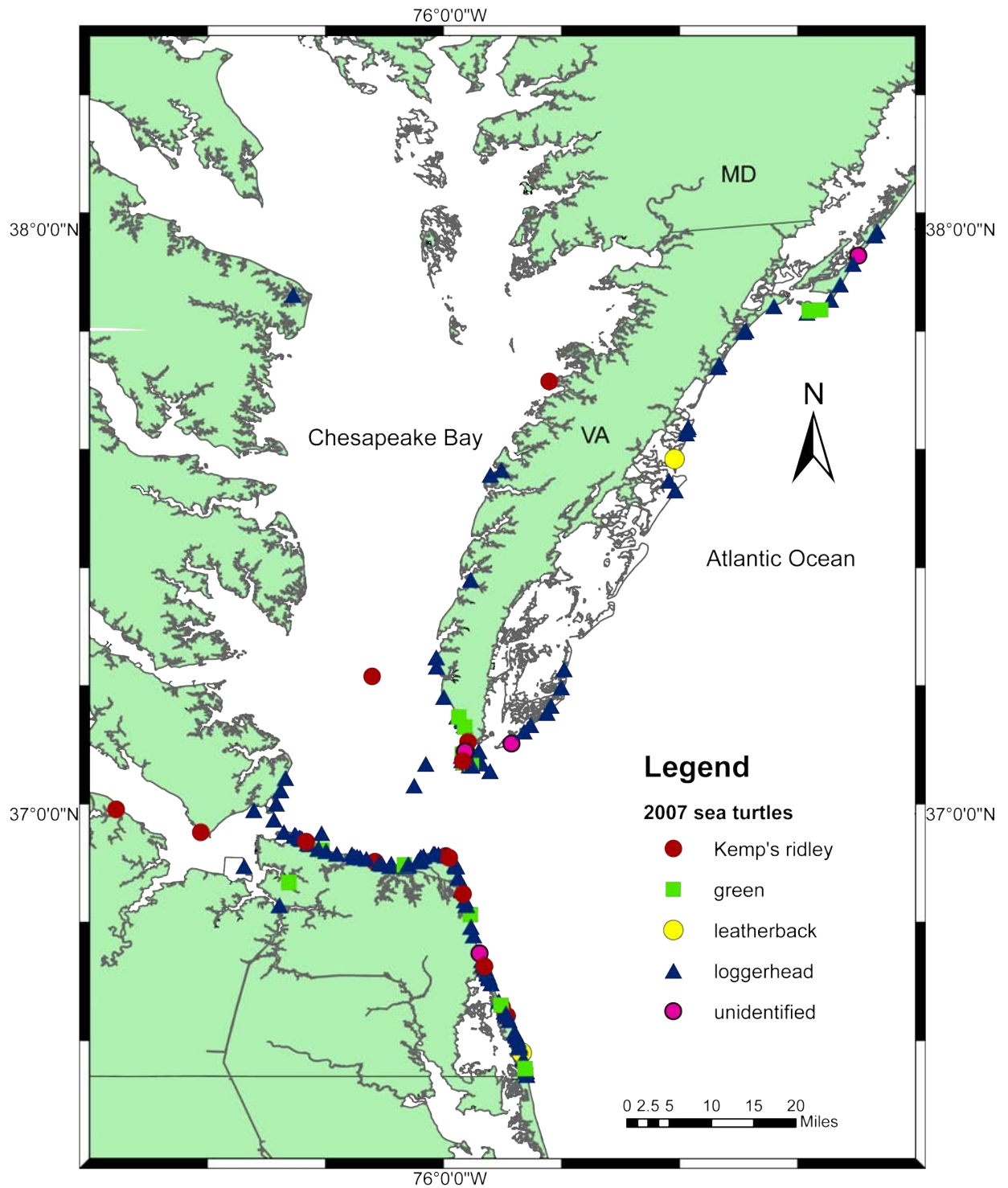


Figure 9: Location of Virginia sea turtle strandings recorded by VAQS from 2007.

## Appendix I: Professional and Education Activities

### Scientific Publications and Presentations

- Barco, Susan G., Friedlaender, Ari S., McLellan, William A., Swingle, W. Mark, and Pabst, D. Ann. 2007. The Phenology of Strandings: Twenty Years of *Tursiops truncatus* Strandings in Virginia, US. Poster presentation to the 17<sup>th</sup> Biennial Conference on the Biology of Marine Mammals, November 29-December 3, Cape Town, South Africa.
- Barco, S.G., Cook, M.L., and Walton, W.J. 2007. Seals in the South: Preparing for Problems that Accompany Pinnipeds in Public Places. Poster presentation to the Southeast and Mid-Atlantic Marine Mammal Symposium, March 16-18, Beaufort, NC.
- Cook, M.L., Barco, S.G., Boyd, D.M., Trapani, C.M., Walton, W.J., and Swingle, W.M. 2007. *Delphinus delphis* Strandings in Virginia from 1990-2006. Poster presentation to the Southeast and Mid-Atlantic Marine Mammal Symposium, March 16-18, Beaufort, NC.
- Cook, M.L., Walton, W.J., George, R., Barco, S.G., Swingle, W.M., and Trapani, C.M. 2007. Evaluation of Four Live Sea Turtles Entangled in Virginia Pound Nets. Poster presentation to the 27<sup>th</sup> Annual Symposium on Sea Turtle Biology and Conservation, February 25-March 1, Myrtle Beach, SC.
- Cook, M.L., Walton, W.J., D'Eri, L.R., Schuder, J.P., and Rotstein, D.S. 2007. Ingestion of Recreational Fishing Gear by an Adult Female Harbor Seal (*Phoca vitulina*). Oral presentation to the Northeast Region Stranding Network Annual Conference, May 1-4, Atlantic City, NJ.
- D'Eri, L.R., Trapani, C.M., Lockhart, G.G., and Barco, S.G. 2007. First Observation of a Potentially Fatal Interaction between Recreational Fishing Gear and *Tursiops truncatus* in Virginia. Oral presentation to the Northeast Region Stranding Network Annual Conference, May 1-4, Atlantic City, NJ.
- D'Eri, L. R., Walton, W.J., Trapani, C.M., Cook, M.L., Lockhart, G.G., and Barco, S.G. 2007. Lost?? Hooded seals in VA and NC in 2006. Poster presentation to the Southeast and Mid-Atlantic Marine Mammal Symposium, March 16-18, Beaufort, NC.
- Trapani, C.M., Cook, M.L., Lockhart, G.G., DeRiggi, S., Walton, W.J., and Barco, S.G. 2007. To Necropsy or Not to Necropsy: What We have Learned From not so Fresh Dead Sea Turtle Strandings. Poster presentation to the 27<sup>th</sup> Annual Symposium on Sea Turtle Biology and Conservation, February 25-March 1, Myrtle Beach, SC.
- Trapani, C.M., Lockhart, G.G., Cook, M.L., Walton, W.J., Barco, S.G., and Swingle, W.M. 2007. Investigating Sea Turtle Strandings in Virginia, 2006. Final Report to the U.S. Department of Commerce, NOAA Fisheries. VAQF Scientific Report 2007-03, 62 pp.
- Trapani, C., Walton, W., Cook, M., D'Eri, L., Lockhart, G., Schuder, J., and Swingle, M. 2007. Rehabilitating a Head Case of a Loggerhead. Oral presentation to the Northeast Region Stranding Network Annual Conference, May 1-4, Atlantic City, NJ.

Appendix I: Professional and Education Activities *cont.*

Swingle, W.M., Trapani, C.M., Barco, S.G., and Lockhart, G.G. 2007. Marine Mammal and Sea Turtle Stranding Response 2006 Grant Report. Final Report to the Virginia Coastal Zone Management Program, NOAA CZM Grant NA05NOS4191180. VAQF Scientific Report 2007-01, 34 pp.

**Educational Activities**

<u>Name</u>	<u>Date</u>	<u>Attendance</u>
<u>Festivals and Events</u>		
Marine Mammal Mania	January 27	hundreds
Virginia Living Museum Reptile Weekend	February 17-18	hundreds
Harp Seal Release (Jaws)	March 30	> 100
Earth Day at the Aquarium	April 22	hundreds
Harbor Seal Release (Sassy)	April 25	> 100
Boardwalk History Festival	April 28-29	thousands
Aquarium Charity Golf Tournament	May 9	150
Harp Seal Release (Chewbacca)	May 19	> 100
Annual Dolphin Count	July 28	hundreds
Trash Bash	August 1-31	hundreds
Dolphin Days at the Aquarium	September 15-16	hundreds
Green Sea Turtle Release (Tiki)	October 20	> 50
<u>Public Presentations</u>		
Cape Henry Rotary Club Presentation	March 5	40
Hampton University Class Presentation	March 21	10
Sea Turtle Science for Teachers	June 25, July 18, 20	55
SWAT Camp Marine Mammal Talk	July 5, 16, Aug 13	60
Aquarium Sea Turtle Training	Sept 26, Nov 26	80
<u>Stranding Center Tours and Group Presentations</u>		
Linkhorn Elementary Turtle Program	March 5	35
Mentoring Young Scientists	March 21	30
Necropsy Demo for Young Scientists	April 21	25
Spirit of Norfolk Group	May 3	5
Michigan State University	May 15	20
Kingston Elementary – Knee Deep in the Chesapeake Program	May 24	25
SWAT Camp Tour and Necropsy	July 6, 17, Aug 14	60
Junior Docents Tour and Necropsy	July 17	15
Extreme Marine Camp	July 31	30
Teacher Tour and Necropsy	August 8, 14	20
Mentoring Young Scientists	December 15	30

Appendix I: Professional and Education Activities *cont.***Training Opportunities**

<u>Name</u>	<u>Date</u>	<u>Attendance</u>
<u>Stranding Response Team and Cooperator Trainings</u>		
Sea Turtle Natural History	April 25	45
Eastern Shore Cooperator Trainings (2)	May 22	30
Dam Neck Military Base Training	May 29	20
Back Bay National Wildlife Refuge Cooperator Training	May 29	20
Necropsy Training	June 3-9	60
Special Operations Cooperator Training	June 20	20
Live Sea Turtle Response and Handling	July 7-14	60
Annual Dolphin Count Training	July 26	60
Stranding Response Team Operations	November 14	70
Large Whale Disentanglement Training	November 19	8
Whale Watch Training	December 18	30

**Conferences, Workshops, and Meetings**

- Unusual Mortality Event Training, January 10-14, Cape Cod, Massachusetts
- Nature Conservancy Marine Conservation Plan Meeting, January 11-12, Baltimore, Maryland
- Atlantic States Marine Fisheries Commission, ACCSP Bycatch Prioritization Committee Annual Meeting, January 18-19, St. Petersburg, Florida
- Zoos and Aquariums Committing to Conservation Conference, January 27-31, Houston, Texas
- 27<sup>th</sup> Annual Symposium on Sea Turtle Biology and Conservation, February 24-28, Myrtle Beach, South Carolina
- Southwest Region Stranding Network Meeting, HI Training, February, La Jolla, California
- Nature Conservancy Marine Conservation Plan Meeting, March 7-8, Durham, New Hampshire
- SouthEast and Mid-Atlantic Marine Mammal Symposium, March 16-18, Beaufort, North Carolina
- Alliance of Marine Mammal Parks & Aquariums Annual Meeting, April 1-3, Alexandria, Virginia
- NOAA Fisheries Atlantic Trawl Gear TRT, April 24-26, Baltimore, Maryland
- NE Region Stranding Network Conference, May 1-4, Atlantic City, New Jersey
- NOAA Fisheries Atlantic Bottlenose Dolphin TRT, June 19-21, Annapolis, Maryland
- Invited Instructor for SeaVet II Aquatic Medical Education Course, June, University of Florida, Gainesville, Florida
- Harbor Porpoise Tagging and Release Training, July 9-11, Riverhead, New York
- NOAA Fisheries Marine Mammal Stranding Network Regional Coordinators Meeting, August 8-9, Silver Spring, Maryland
- Association of Zoos and Aquariums Annual Conference and Sea Turtle Working Group

Appendix I: Professional and Education Activities *cont.*

Meeting, September 16-21, Philadelphia, Pennsylvania

- NOAA Fisheries Marine Mammal Serious Injury Workshop, September 9-13, Seattle, Washington
- HI Training Class for Florida Fish and Wildlife Conservation Commission, St. Petersburg, Florida
- North Atlantic Right Whale Consortium Annual Meeting, November 7-8, New Bedford, Massachusetts
- 17<sup>th</sup> Biennial Conference on the Biology of Marine Mammals, November 29 – December 3, Cape Town, South Africa
- Virginia Coastal Zone Management Program Partners Workshop, December 6-7, Portsmouth, Virginia
- NOAA Fisheries Prescott Stranding Grant Program, Peer Review Panel, December 10-14, Albuquerque, New Mexico

## Appendix II: Highlights of the year - Marine Mammals



Twenty-two percent of the marine mammals that the VAQS Team responded to in 2007 were determined to have definite signs of human interaction (HI). This 59 foot fin whale likely died as a

result of a ship strike. In the last 10 years, nine out of the 25 total stranded large whales have died as a result of ship strike.



This humpback whale (left) was found entangled in commercial gill net off the coast of Virginia Beach. The net was wrapped around the peduncle and flukes, anchoring the animal, but allowing it to come up to breathe. A team from the Virginia Aquarium, specially trained in large whale disentanglement, was able to successfully disentangle the animal. The Virginia Aquarium Stranding Response Team has been involved in several large whale, dolphin and sea turtle disentanglements.

This harbor porpoise (right), stranded live in North Carolina. It was transferred to VAQS and held for 24 hours before being flown to the Riverhead Foundation in New York. The animal was rehabilitated for four months, then released off the coast of Long Island, NY. Cooperation between states is key during many stranding events.



There is an apparent increasing trend of pinniped presence and species diversity in Virginia. VAQS recovered and rehabilitated two harp, one gray and two harbor seals in 2007. Pictured to the left are the first two harp seals to be released from Virginia. Outfitted with satellite transmitters, both animals migrated back to their “normal” habitats in Canada.

### Appendix III: Highlights of the year - Sea Turtles



“Tiki, Jr.”, a 325 pound green sea turtle, was rescued off the coast of Virginia Beach after she became entangled in whelk pot buoy line (above left). Tiki Jr.’s flipper was treated intensively for three months to avoid amputation as a result of the entanglement. The flipper was saved and she was released with a satellite transmitter to track her post-release movements. As of February 12th, her satellite transmitter was still active. She had migrated to Florida and appeared to be behaving normally. Satellite tracking is a useful tool in monitoring the post-release behavior of animals, especially those with unusual case histories.



2007 was a very unusual year for live sea turtle strandings. Five loggerheads and a Kemp’s ridley were treated by VAQS for severe illness or injury and were unable to be rehabilitated. Two loggerheads, one transferred to VAQS from Delaware, and one from Virginia, were severe boat strike victims. A Kemp’s ridley from Virginia, also died as a result of a boat strike. The rest were ill due to pneumonia and bacterial infections and died anywhere from 24 hours to six weeks after being admitted. A juvenile loggerhead, transferred from New Jersey, with head trauma and neurological issues as well as a cold-stunned, six pound, juvenile, green sea turtle, are currently in rehab.

## Appendix IV: Stranding Network Datasheets

## A: Marine Mammal Level A Datasheet

**MARINE MAMMAL STRANDING REPORT - LEVEL A DATA**

FIELD #: VAQS2007 NMFS REGIONAL #: \_\_\_\_\_ NATIONAL DATABASE#: \_\_\_\_\_  
 COMMON NAME: \_\_\_\_\_ GENUS: \_\_\_\_\_ SPECIES: \_\_\_\_\_  
 EXAMINER Letterholder: Virginia Aquarium Stranding  
 Name: \_\_\_\_\_ Affiliation: Virginia Aquarium Stranding  
 Address: 717 General Booth Blvd. Virginia Beach, VA 23451 Phone: 757-437-6159

<b>LOCATION OF INITIAL OBSERVATION</b> State: _____ County: _____ City: _____ Body of Water: _____ Locality Details: _____ Latitude: _____ N <input type="checkbox"/> actual Longitude: _____ W <input type="checkbox"/> estimated How lat/long determined (Check ONE): <input type="checkbox"/> GPS <input type="checkbox"/> Map <input type="checkbox"/> Internet/Software		<b>OCCURRENCE DETAILS</b> <input type="checkbox"/> Restrand GE#: _____ (NMFS USE) <b>Group Event:</b> <input type="checkbox"/> YES <input type="checkbox"/> NO If Yes, Type: <input type="checkbox"/> Cow/Calf Pair <input type="checkbox"/> Mass Stranding # Animals: _____ <input type="checkbox"/> actual <input type="checkbox"/> estimated <b>Findings of Human Interaction:</b> <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> Could not Be Determined (CBD) If Yes, Check one or more: <input type="checkbox"/> 1. Boat Collision <input type="checkbox"/> 2. Shot <input type="checkbox"/> 3. Fishery Interaction <input type="checkbox"/> 4. Other Human Interaction: _____ Describe How Determined: _____ Gear Collected? <input type="checkbox"/> YES <input type="checkbox"/> NO Gear Disposition: _____ <b>Other Findings upon Level A:</b> <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> CBD If Yes, Check one or more: <input type="checkbox"/> 1. Illness <input type="checkbox"/> 2. Injury <input type="checkbox"/> 3. Other Findings: _____ Describe How Determined: _____																																											
<b>INITIAL OBSERVATION</b> Date: Year: _____ Month: _____ Day: _____ First Observed: <input type="checkbox"/> Beach or Land <input type="checkbox"/> Floating <input type="checkbox"/> Swimming <b>CONDITION AT INITIAL OBSERVATION</b> (Check ONE) <input type="checkbox"/> 1. Alive <input type="checkbox"/> 4. Advanced decomposition <input type="checkbox"/> 2. Fresh dead <input type="checkbox"/> 5. Mummified/Skeletal <input type="checkbox"/> 3. Moderate decomposition <input type="checkbox"/> 6. Unknown		<b>LEVEL A EXAMINATION</b> <input type="checkbox"/> Not Able to Examine Date: Year: _____ Month: _____ Day: _____ <b>CONDITION AT EXAMINATION</b> (Check ONE) <input type="checkbox"/> 1. Alive <input type="checkbox"/> 4. Advanced decomposition <input type="checkbox"/> 2. Fresh dead <input type="checkbox"/> 5. Mummified/Skeletal <input type="checkbox"/> 3. Moderate decomposition																																											
<b>INITIAL LIVE ANIMAL DISPOSITION</b> (Check one or more) <input type="checkbox"/> 1. Left at Site <input type="checkbox"/> 7. Transferred to Rehabilitation: <input type="checkbox"/> 2. Immediate Release at Site Date: _____ Facility: _____ <input type="checkbox"/> 3. Relocated <input type="checkbox"/> 4. Disentangled <input type="checkbox"/> 8. Died during Transport <input type="checkbox"/> 5. Died at Site <input type="checkbox"/> 9. Euthanized during Transport <input type="checkbox"/> 6. Euthanized at Site <input type="checkbox"/> 10. Other: _____ <b>CONDITION/DETERMINATION</b> (Check one or more) <input type="checkbox"/> 1. Sick <input type="checkbox"/> 4. Deemed Healthy <input type="checkbox"/> 7. Location Hazardous: <input type="checkbox"/> 2. Injured <input type="checkbox"/> 5. Abandoned/Orphaned <input type="checkbox"/> a. To animal <input type="checkbox"/> 3. Out of Habitat <input type="checkbox"/> 6. Inaccessible <input type="checkbox"/> b. To public <input type="checkbox"/> 8. Unknown/CBD <input type="checkbox"/> 9. Other: _____ Comments: _____		<b>MORPHOLOGICAL DATA</b> <b>SEX</b> (Check ONE) <b>AGE CLASS</b> (Check ONE) <input type="checkbox"/> 1. Male <input type="checkbox"/> 1. Adult <input type="checkbox"/> 4. Pup/Calf <input type="checkbox"/> 2. Female <input type="checkbox"/> 2. Subadult <input type="checkbox"/> 5. Unknown <input type="checkbox"/> 3. Unknown <input type="checkbox"/> 3. Yearling Straight Length: _____ <input type="checkbox"/> cm <input type="checkbox"/> in <input type="checkbox"/> actual <input type="checkbox"/> estimated Weight: _____ <input type="checkbox"/> kg <input type="checkbox"/> lb <input type="checkbox"/> actual <input type="checkbox"/> estimated <b>PHOTOS/VIDEOS TAKEN:</b> <input type="checkbox"/> YES <input type="checkbox"/> NO Photo/Video Disposition: _____																																											
<b>TAG DATA</b> Tags Were: Present at Time of Stranding (pre-existing): <input type="checkbox"/> YES <input type="checkbox"/> NO Applied during Stranding Response: <input type="checkbox"/> YES <input type="checkbox"/> NO <table border="1"> <thead> <tr> <th>ID #</th> <th>Color</th> <th>Type</th> <th>Placement *</th> <th>Applied</th> <th>Present</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td>(Circle ONE) D DF L</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td></td> <td></td> <td></td> <td>LF LR RF RR</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td></td> <td></td> <td></td> <td>D DF L</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td></td> <td></td> <td></td> <td>LF LR RF RR</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td></td> <td></td> <td></td> <td>D DF L</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td></td> <td></td> <td></td> <td>LF LR RF RR</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table> * D = Dorsal; DF = Dorsal Fin; L = Lateral Body LF = Left Front; LR = Left Rear; RF = Right Front; RR = Right Rear		ID #	Color	Type	Placement *	Applied	Present				(Circle ONE) D DF L	<input type="checkbox"/>	<input type="checkbox"/>				LF LR RF RR	<input type="checkbox"/>	<input type="checkbox"/>				D DF L	<input type="checkbox"/>	<input type="checkbox"/>				LF LR RF RR	<input type="checkbox"/>	<input type="checkbox"/>				D DF L	<input type="checkbox"/>	<input type="checkbox"/>				LF LR RF RR	<input type="checkbox"/>	<input type="checkbox"/>	<b>WHOLE CARCASS STATUS</b> (Check one or more) <input type="checkbox"/> 1. Left at site <input type="checkbox"/> 4. Towed: Lat _____ Long _____ <input type="checkbox"/> 7. Landfill <input type="checkbox"/> 2. Buried <input type="checkbox"/> 5. Sunk: Lat _____ Long _____ <input type="checkbox"/> 8. Unknown <input type="checkbox"/> 3. Rendered <input type="checkbox"/> 6. Frozen for Later Examination <input type="checkbox"/> 9. Other: _____ <b>SPECIMEN DISPOSITION</b> (Check one or more) <input type="checkbox"/> 1. Scientific collection <input type="checkbox"/> 2. Educational collection <input type="checkbox"/> 3. Other: _____ Comments: _____ <b>NECROPSIED</b> <input type="checkbox"/> YES <input type="checkbox"/> NO Date: _____ <b>NECROPSIED BY:</b> _____	
ID #	Color	Type	Placement *	Applied	Present																																								
			(Circle ONE) D DF L	<input type="checkbox"/>	<input type="checkbox"/>																																								
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			D DF L	<input type="checkbox"/>	<input type="checkbox"/>																																								
			LF LR RF RR	<input type="checkbox"/>	<input type="checkbox"/>																																								

## B: Sea Turtle Level A Datasheet

## SEA TURTLE STRANDING AND SALVAGE NETWORK – STRANDING REPORT

<b>OBSERVER'S NAME / ADDRESS / PHONE:</b> First _____ M.I. _____ Last _____ Affiliation <u>Virginia Aquarium Stranding Response Program</u> Address <u>717 General Booth Blvd.</u> <u>Virginia Beach, VA 23451</u> Area code/Phone number <u>757 437-6159</u>	<b>STRANDING DATE:</b> Year 2007 Month <input type="checkbox"/> <input type="checkbox"/> Day <input type="checkbox"/> <input type="checkbox"/> Turtle number by day <input type="checkbox"/> <input type="checkbox"/> <b>VAQS2007</b> <i>-State coordinator must be notified within 24 hrs;          this was done by <input type="checkbox"/> phone (757)437-6159  <input type="checkbox"/> email <input type="checkbox"/> fax (757)437-4933</i>
--	---

**SPECIES: (check one)**

☐ CC = Loggerhead  
☐ CM = Green  
☐ DC = Leatherback  
☐ EI = Hawksbill  
☐ LK = Kemp's Ridley  
☐ LO = Olive Ridley  
☐ UN = Unidentified  
*Check Unidentified if not positive. Do Not Guess.*

Carcass necropsied? ☐ Yes ☐ No  
 Necropsied by \_\_\_\_\_  
 Photos taken? ☐ Yes ☐ No  
 Species verified by state coordinator?  
☐ Yes ☐ No

**SEX:**

☐ Undetermined  
☐ Female ☐ Male  
 Does tail extend beyond carapace?  
☐ Yes; how far? \_\_\_\_\_ cm / in  
☐ No  
 How was sex determined?  
☐ Necropsy  
☐ Tail length (adult only)

**STRANDING LOCATION:** ☐ Offshore (Atlantic or Gulf beach) ☐ Inshore (bay, river, sound, inlet, etc)

State \_\_\_\_\_ County \_\_\_\_\_

Descriptive location (be specific) \_\_\_\_\_

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

**CONDITION: (check one)**

☐ 0 = Alive  
☐ 1 = Fresh dead  
☐ 2 = Moderately decomposed  
☐ 3 = Severely decomposed  
☐ 4 = Dried carcass  
☐ 5 = Skeleton, bones only

**TAGS: Contact state coordinator before disposing of any tagged animal!!**

Checked for flipper tags? ☐ Yes ☐ No

**Check all 4 flippers.** If found, record tag number(s) / tag location / return address

\_\_\_\_\_

\_\_\_\_\_

PIT tag scan? ☐ Yes ☐ No

If found, record number / tag location

\_\_\_\_\_

Coded wire tag scan? ☐ Yes ☐ No

If positive response, record location (flipper)

\_\_\_\_\_

Checked for living tag? ☐ Yes ☐ No

If found, record location (scute number & side)

\_\_\_\_\_

**FINAL DISPOSITION: (check)**

☐ 1 = Left on beach where found; painted? ☐ Yes\* ☐ No(5)  
☐ 2 = Buried: ☐ on beach / ☐ off beach;  
 carcass painted before buried? ☐ Yes\* ☐ No  
☐ 3 = Salvaged: ☐ all / ☐ part(s), what/why? \_\_\_\_\_  
 \_\_\_\_\_  
☐ 4 = Pulled up on beach/dune; painted? ☐ Yes\* ☐ No  
☐ 6 = Alive, released  
☐ 7 = Alive, taken to rehab. facility, where? \_\_\_\_\_  
 \_\_\_\_\_  
☐ 8 = Left floating, not recovered; painted? ☐ Yes\* ☐ No  
☐ 9 = Disposition unknown, explain \_\_\_\_\_  
 \_\_\_\_\_  
*\*If painted, what color? \_\_\_\_\_*

**CARAPACE MEASUREMENTS: (see drawing)**

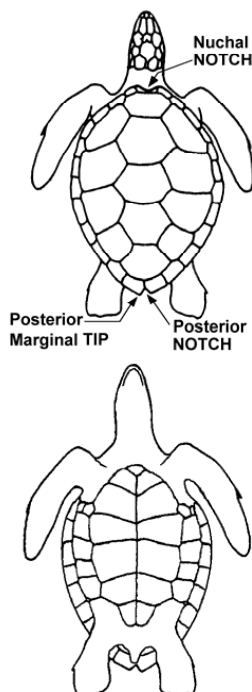
**Using calipers** Circle unit

Straight length (NOTCH-TIP) \_\_\_\_\_ cm / in  
 Minimum length (NOTCH-NOTCH) \_\_\_\_\_ cm / in  
 Straight width (Widest Point) \_\_\_\_\_ cm / in

**Using non-metal measuring tape** Circle unit

Curved length (NOTCH-TIP) \_\_\_\_\_ cm / in  
 Minimum length (NOTCH-NOTCH) \_\_\_\_\_ cm / in  
 Curved width (Widest Point) \_\_\_\_\_ cm / in

Weight ☐ actual / ☐ est. \_\_\_\_\_ kg / lb



Mark wounds / abnormalities on diagrams at left and describe below (note tar or oil, gear or debris entanglement, propeller damage, epibiota, papillomas, emaciation, etc.). **Please note if no wounds / abnormalities are found.**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Genetics sent \_\_\_\_\_ Flipper(s) sent \_\_\_\_\_